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ABSTRACT

It is crucial that measures and indicators for important aspects of the educational system be found and collected. As the education system strives to meet commonly identified goals, effective inputs become easier to identify and become more amenable to common collection and use, overcoming the two major impediments to developing national education indicators: the lack of sufficient incentive to collect information, and balkanized data collection programs. This report provides new and important data regarding teacher preparation, certification, and assessment; state instructional efforts; models of instructional reforms; and data from the 1990 NAEP mathematics assessment. Gaps in the report's data include cost-of-living factors when measuring per-pupil costs; direct measures for physically and linguistically handicapped students; measures of teachers' professional performance; and school completion rates and achievement. Collection of valid state-level indicators is crucial to providing information for future educational policies. Over the long run, a comprehensive data set could tell policy makers that certain policies, under given environmental conditions, seem to be associated with certain outcomes, adding immensely to the information base upon which educational policy is made. Seven charts and 29 tables of state-by-state data are included. (TEJ)

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STATE EDUCATION INDICATORS

1990

FOR THE SCHOOL YEAR 1989–1990

EA 024 756

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STATE EDUCATION INDICATORS

1990

FOR THE SCHOOL YEAR 1989–1990

The Council of Chief State School Officers (CCSSO) is a nationwide non-profit organization of the 57 public officials who head departments of public education in every state, the District of Columbia, the Department of Defense Dependents Schools, and five extra-state jurisdictions. CCSSO seeks its members' consensus on major education issues and expresses their views to civic and professional organizations, to federal agencies, to Congress, and to the public. Through its structure of standing committees and special task forces, the Council responds to a broad range of concerns about education and provides leadership on major education issues.

Because the Council represents the chief education administrator, it has access to the educational and governmental establishment in each state and to the national influence that accompanies this unique position. CCSSO forms coalitions with many other education organizations and is able to provide leadership for a variety of policy concerns that affect elementary and secondary education. Thus, CCSSO members are able to act cooperatively on matters vital to the education of America's young people.

The State Education Assessment Center is a permanent, central part of the Council of Chief State School Officers. This Center was established through a resolution by the membership of CCSSO in 1984. The Assessment Center operates programs to improve the collection and use of data on education by the states. These programs include expanding the breadth of educational data coverage, improving the quality of data that are collected, and facilitating the dissemination and use of data for planning and other functions. This is the principal report of the Assessment Center's program of indicators on education.

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CONTENTS

Introduction i

State Background Characteristics 1

SCHOOL SYSTEM CHARACTERISTICS

Table 1: Public Schools 3
Table 2: School Age Population Age 5-17 Years 4
Table 3: School Age Population Age 5-17 Years as Percent of Total Population 5

STUDENT NEEDS

Table 4: Percent Minority of Population Age 5-17 Years: 1980 6
Table 5: Students At Risk of School Failure 7

POPULATION CHARACTERISTICS

Table 6: Per Capita Income and High School Attainment 8
Table 7: Place of Residence 9
Table 8: Population Density 10
Table 9: Voting Patterns 11
Table 10: State Resources 12

USING BACKGROUND CHARACTERISTICS

Table 11: Regionality 13
Chart 1: Relative Wealth by State Versus Expenditure per Pupil 14
Table 12: Urbanicity 16

The States' Educational Policies and Programs 17

INSTRUCTIONAL TIME

Table 13: Length of School Year 20
Table 14: Length of School Day 21

INSTRUCTIONAL PROGRAMS

Table 15: Kindergarten Policies 22
Table 16: High School Graduation Requirements in Carnegie Course Units 23
Chart 2: Competency Testing 24

SCHOOL PARTICIPATION

Table 17: Student Attendance 25

TEACHER PREPARATION AND TEACHER CHARACTERISTICS

Table 18: Initial Preparation, New Teacher Induction, Alternative Route 26
Chart 3: Teacher Assessment for Preparation 27
Table 19: Teacher Assessment for Certification 28
Chart 4: Alternative Routes for Teacher Licensure 31
Table 20: Ethnicity and Sex of Elementary and Secondary Teachers 32
Table 21: Minority Teacher Recruitment 33

STATE INDICATORS OF MATHEMATICS INSTRUCTION

Table 22: Reform Efforts in Mathematics 34
Table 23: Current Supply of Teachers in High School Mathematics and Physics 35
Table 24: Course Enrollments in Mathematics and Science 36

STATE INITIATIVES TO RESTRUCTURE LEARNING

Table 25: Percent of Teachers Involved in Making Selected Decisions 37
Table 26: Selected Characteristics of Public School Teachers' Current Teaching Assignments 38
Table 27: Percent of Teachers Reporting Various Problems in Their Schools 39
Table 28: State Initiatives to Restructure Learning 40

Educational Outcomes 53

STATE ACCOUNTABILITY SYSTEMS

Chart 5: State Public Accountability Policies 55

1990 NAEP TRIAL STATE MATHEMATICS ASSESSMENT

Chart 6: Comparison of Overall Mathematics Proficiency 56
Table 29: Average Proficiency in Mathematics Content Areas 57
Chart 7: States Participating in the 1990 and 1992 NAEP State Trials 58

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This report was prepared by Cadelle Hemphill, project associate, State Education Assessment Center.

INTRODUCTION

National education goals are with us, changing and strengthening the context for educational indicators. More than ever indicators are needed to gauge the progress of our society in meeting these goals. It is crucial that measures for important aspects of the education system be found and collected. Student achievement data, both for the system as a whole and for individual students, are critical, as are measures of the nature and quality of the education being provided to our students. We must be concerned with what content is covered, how well, and for which students.

National goals facilitate the collection and use of indicators in education. The national consensus represented by and sought in national goals provides a focus and a common foundation for collecting and defining educational indicators. Consensus around desired outcomes can lead to more commonality of focus on attaining those outcomes and simultaneously can lead to more agreement about the definitions and procedures by which measures of those outcomes should be collected. Similarly, as the education system strives to meet more commonly identified and accepted goals, the effective and worthwhile inputs of education also become easier to identify, and they too become more amenable to more common collection and use. Thus the two major stumbling blocks to development of educational indicators in the United States may be overcome. One is the lack of sufficient incentive to undertake the effort and expense to collect the information that might be needed. The other is that our decentralized system has resulted in a balkanized data collection program with varying definitions at the classroom, school, district and state levels. Striving to reach national goals makes information more important and national consensus represented by those goals makes common comparable data collection more feasible and appropriate.

This 1990 Indicators Report updates data provided in previous editions. Many of the figures can be updated now as decennial census data become available. This report also includes new data in areas of particular concern at this time. It expands the information on teacher preparation, certification, and assessment policies. It provides new information on state instructional efforts particularly in math and science and conveys models of what states are doing to reform instruction to meet the needs of key student groups. Perhaps most striking, this report now includes the results of the first ever collection of state-by-state data on student achievement—the results from the 1990 NAEP assessment in mathematics. This is a truly historic addition to the educational indicators picture in the United States, and it allows the CCSSO model to operate—that is we are now able to look at outcome indicators in relation to inputs accounting for differences in social and economic conditions among the states.

As we strive toward nationally identified achievement goals, the corresponding standard for and criteria for quality among students and teachers become critical. Ideally they should be closely connected; that is, the standards we are reflecting for the development of teacher competency should be substantively consistent with the achievement standards we are setting for students. This does not necessarily mean that teacher education programs only should consist of courses in the same mathematical, science, or language arts concepts that students are developing. These programs must also focus on standards for teacher knowledge, professional skill and ability to work with at-risk students that are logically consistent with the substantive standards and expectations we are setting for students. In this report we have attempted to communicate what is at this stage, a nascent system of indicators on policies, programs, and practices for teacher preparation, assessment and certification. In the future, this system could provide for that correspondence by indicating where states have substantive teacher preparation policies, assessment programs, and certification practices that insure that teachers have the knowledge and pedagogical skills needed to move students toward their achievement goals.

This is also the report resulting from the fifth year of effort on the CCSSO indicators program. At this time several landmarks have been reached. One is the compilation of state-by-state achievement data through NAEP. This objective was laid out in 1985 as CCSSO began its Indicators program, and the fruit of those plans has finally been born. The remainder of the Council's program, that is the inclusion of background and school process indicators, has been filled out in many ways. The design and concept of that program has shifted to keep up with events in the nation. National goals were not on the horizon in 1985, and our thinking about educational indicators and how they should be used has evolved. It is still critically important to understand that state-level indicators like these cannot and should not be used to generate cause and effect conclusions about the education system, rather at the state level these indicators should be reviewed and analyzed in conjunction with one another to provide clues or indications of what might be going on. This is not a data system which in itself can resolve all of the complications of the relationships among educational variables. Nevertheless, we are closer to having a comprehensive set of indicators which could inform policy and decision-making about the quality and directions that our schools should be taking.

The CCSSO Program On Educational Indicators

The Council of Chief State School Officers through the State Education Assessment Center, is working toward reporting information on a comprehensive set of indicators

which describe states' educational systems. This report includes data which fit the Council's model and meet the program's quality standards.

Educational indicators must address important aspects of the educational system in order to provide information that is useful and avoids simplistic and misleading comparisons. The Council program includes data in three areas: educational outcomes, state policies and practices, and state background characteristics.

Educational outcomes are the end products or accomplishments of the educational system. Ideally, outcomes must represent the different goals of education, e.g., student attendance; student achievement; graduation rates ; and student progress following completion of school.

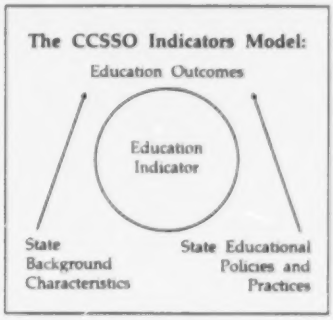
State-level policies and practices must be driven by the need to improve the education system as suggested by the status of outcome measures. Features which can be improved through state-level policies and practices are: length of instructional time; instructional content; teacher quality; resource allocation; and programmatic policies.

Background characteristics are typically beyond the control of any education agency and may affect the ability of those agencies to provide the level of services needed to serve student populations. Examples of these characteristics are: student memberships; size of the school-age population; income levels; and limits to the states' ability to generate resources.

"For an indicator system to reach its full potential, the willingness and capabilty to encompass inputs, processes, and outcomes and establish the relationships among them is essential." (Kaagan and Coley, 1989).

It would be of little value to develop indicators and not analyze them in light of state policies and demographic factors. Direct comparisons of student scores in State A versus State B, by themselves, indicate only a difference in scores. But a comparison of scores between states with similiar backgrounds or policies may be meaningful and may indicate that better performing states have programs the lesser performing states should consider adopting; because socio-economic status has been ruled out as the sole cause of what's going on.

The CCSSO Indicators Model:



Indicators for these three areas—education outcomes, state policies and practices, and state background characteristics, are being developed and are reported by the CCSSO in this report. They are also being developed and reported by other state, local and national organizations including the National Education Goals effort.

Data Gaps

This report and others like it can amass a number of state-level statistics on education. But there are major gaps. Among statistics on education, it is difficult, for example, to account for differences in the cost of living when measuring per-pupil wealth, and we lack valid, direct measures of the proportion of students who are handicapped or have limited proficiency in English, to use as background factors reflecting educational need. Among features of the process of schooling, a true measure of the quality of teachers' professional performance is not available and will be difficult and expensive to obtain.

This report includes results from the 1990 Trial State NAEP Mathematics Assessment. These data provide the first available state-by-state indicator of educational outcomes, as outlined in the CCSSO indicator model. Other outcomes that should be reported to reflect the multiple goals of education—school completion rates, achievement in other core academic subjects, and how students do after leaving school—are being developed and will be reported in future Indicator reports.

Next Steps

The collection of valid, state-level indicators in education is crucial to providing information that can be used constructively to establish education policies for the future.

In order to know how well the system is doing we need to expand data reporting on educational outcomes to complete the CCSSO indicator model. Outcome data will be interpreted in terms of demographic or regional clusters. For example, low- or high-wealth states will be able to compare themselves to see how they are doing in relation to other states facing similar circumstances, and states in a relatively homogeneous region, like the Great Lakes area might want to compare themselves. These comparisons can be made to guide short-range interpretations of relative standing without removing the principle that performance differences based on demographic factors should be reduced and ultimately removed.

In addition, outcomes must be related, at least tentatively, to educational inputs, so policymakers and decision makers have some clues as to where to place their efforts. If patterns indicate that high-performing or improving states have certain program features in common, other states might want to look at those features as areas where improvements might be made.

Over the long run, a comprehensive set of state-level indicators could tell a policymaker or program manager that, under given environmental conditions, certain policies seem to be associated with certain outcomes. Such indicators should not singly, definitively, and conclusively guide policy, but they could add immensely to the information base upon which policy is made.

STATE

BACKGROUND

CHARACTERISTICS

States operate schools under varying circumstances: the size and complexity of the school systems, the characteristics of the students served, and the level of resources available to support education. The indicators in this section portray the dimensions of the public school system operated in each state. They also portray the relative potential community support available for the education system. Thirdly, they attempt to include indicators of students at risk of school failure or needing extra attention and services; finally they incorporate the measures of the relative wealth of the state and its potential for funding the schools. Several measures are included of the urbanicity or population density of the school system. At the end of this section, three of these measures are used to show how states could be grouped by background characteristics in order to look at other indicators of educational programs or outcomes.

School System Characteristics

Table 1 includes measures of the overall size of the school system in each state, the fall membership of public schools is included, as are the number of school districts including the number and percent which are under 1000 students. Finally, the number of public schools operated in each system is shown. A number of characteristics are prominent, one is that these states vary immensely in the overall size of their public school system. Secondly, states vary in the organization of their school system into school districts from relatively small numbers of districts, fewer than a hundred, to more than a thousand. In many of the states with a large number of school districts a substantial proportion of those are relatively small districts, that is those with a membership of under a thousand.

Table 2 shows the school age population, that is, population age 5 to 17 years, from 1979 to 1989. The main finding in this table is the variety with which school age population is changing among the states where some states are experiencing declines of twenty percent or more, and other states are experiencing increases of more than twenty percent in a ten year period.

Education is competing ever more with other service sectors for political and fiscal support. **Table 3** shows the school age population of each state as a percent of the total population. Two implications seem important. One is that there is some variability in the extent to which the population as a whole is composed of school age children. This figure ranges from about fifteen percent in some states to twenty-two percent in others and nearly twenty-seven percent in Utah. This may indicate varying political constituencies for schools among those states. The other implication is in the columns showing change from 1979–89 and 1984–89. Some states have been experiencing relatively substantial declines in the constituencies served by the schools in recent years. In some states there has been a more substantial increase, the District of Columbia and Utah, most notably.

Student Needs

Table 4 shows the percent of the school age population from minority groups. The substantial variation of this figure is striking with the range of less than five percent in several states to populations that are one-third or more minority.

The education system has become particularly concerned about meeting the needs of students whose background conditions leave them at risk of not being adequately served by the schools. Table 5 assembles four indicators of these conditions. The first is the number of births to teenage mothers, an indication of high school age girls whose education may be interrupted due to pregnancy, and is a measure of babies whose neo-natal conditions may lead to other challenges in school. The second column further refines this measure to those young mothers who are of post-secondary school age but have less than twelve years of school. Again, there is a good deal of variability in this figure, but overall about 40-45% of the births to teenage mothers are to mothers with less than a high school education. The third column is the percentage of children under 18 years of age who are also below the poverty line. Overall, 19.11 percent of children under 18 years of age are living in households with an income level below the poverty line. This figure varies substantially among the states with essentially one-third of the children of some states living in poverty conditions while less than 10 percent of children in other states are living in these conditions. The final column shows the number of students in each state that are limited English proficient. This figure is an indicator of the extent to which special bilingual educational services are needed.

Population Characteristics

General population socio-economic characteristics have been found consistently to be related to educational outcomes. Two measures are included in **Table 6,** per capita income of the population in each state and the percentage of adults with four years of high school. Per capita income figures vary by a factor of two to one among the states reflecting substantial variations in overall socio-economic levels. The percent of adults completing high school also varies substantially from essentially half the population, or a little more, to more than eighty percent in some states.

This table attempts to capture the urbanicity of the school system operated by each state. **Table 7** shows the extent to which the population resides in metropolitan areas and non-metropolitan areas.

Table 8 shows the overall population density of each state.

The voting patterns in **Table 9** are intended to reflect one measure of the potential civic support of institutions like schools. It shows state by state the percent of voters voting for President or Congress in the 1988 elections. The rate with which this figure is changing is intended to show an overall relative level of civic involvement among the states.

Table 10, State Resources, includes two measures of state wealth. The first is gross state product for 1986 and the extent of change from 1985–1986. The 1986 figures have shown both total gross state product and product as a function of the number of school age children. The second figure is the relative tax capacity, which is the relative revenues that will be generated in a state on its' tax base if those tax bases were exercised in a national average figure. It does not reflect current tax effort.

Chart 1 groups states by relative wealth using gross state product per school age child as the basis. Five bands are created reflecting high, moderately high, moderate, moderately low and low relative wealth. For illustrative purposes, these figures are shown with education expenditure per pupil. These figures show that along the relatively homogenous clusters of states in terms of overall wealth, considerable variation can exist in expenditure per pupil with some states spending relatively high amounts and others low amounts with fairly similar levels of wealth to draw on.

Using Background Characteristics

Table 11 shows states clustered by region and displays two other indicators or measures with these regional clusters. One is public school membership as a percentage of the 5–17 year old population, the other is education expenditures. Again, considerable variation can be seen on the expenditure levels by region and some variability can be seen in the public school membership by region, however in many regions these figures are quite homogeneous.

Table 12 shows states grouped by the overall urbanicity of the state. Urbanicity is reflective of the proportion of the population living in cities, urban fringe towns and rural areas. Expenditure figures exhibit considerable variation given the urbanicity clustering of states. However, in several clusters (city/town, city/urban fringe/town) the figures are fairly homogeneous.

TABLE 1—PUBLIC SCHOOLS

	Fall Membership Public Schools	School Districts			Number of Public Schools
	1989	Number 1989–90	Membership Under 1000	% Membership Under 1000	1989–90
Alabama	723,343	129	2	1.6	1,292
Alaska	109,280	54	41	75.9	495
Arizona	607,615	238	139	58.4	1,026
Arkansas	434,960	329	223	67.8	1,097
California	4,771,978	1,074	523	48.7	7,433
Colorado	562,755	176	107	60.8	1,337
Connecticut	461,560	166	54	32.5	983
Delaware	97,808	19	3	15.8	170
District of Columbia	81,301	1	0	0.0	184
Florida	1,772,349	67	0	0.0	2,505
Georgia	1,126,535	186	15	8.1	1732
Hawaii	169,493	1	0	0.0	234
Idaho	214,932	115	64	55.7	574
Illinois	1,797,355	964	569	59.0	4,225
Indiana	954,165	303	51	16.8	1,923
Iowa	478,486	431	326	75.6	1,607
Kansas	430,864	304	214	70.4	1,459
Kentucky	630,688	177	35	19.8	1,385
Louisiana	783,025	66	0	0.0	1,536
Maine	213,775	282	205	72.7	748
Maryland	698,806	24	0	0.0	1,217
Massachusetts	825,588	352	179	50.9	1,817
Michigan	1,576,785	561	173	30.8	3,314
Minnesota	739,553	436	287	65.8	1,564
Mississippi	502,020	152	13	8.6	954
Missouri	807,934	543	376	69.2	2,151
Montana	151,265	548	507	92.5	758
Nebraska	270,920	838	801	95.6	1,524
Nevada	186,834	17	4	23.5	331
New Hampshire	171,696	170	107	62.9	444
New Jersey	1,076,005	603	295	48.9	2,264
New Mexico	296,057	88	49	55.7	658
New York	2,565,841	721	236	32.7	3,996
North Carolina	1,080,744	134	3	2.2	1,952
North Dakota	117,816	280	262	93.6	679
Ohio	1,767,159	613	117	19.1	3,715
Oklahoma	578,580	604	495	82.0	1,859
Oregon	472,394	303	208	68.6	1,190
Pennsylvania	1,655,279	501	47	9.4	3,276
Puerto Rico	651,225	1	0	0.0	1,661
Rhode Island	135,729	37	5	13.5	294
South Carolina	616,177	91	7	7.7	1,103
South Dakota	127,329	185	159	85.9	799
Tennessee	819,660	141	16	11.3	1,535
Texas	3,328,514	1,062	637	60.0	5,937
Utah	437,446	40	5	12.5	718
Vermont	94,779	276	231	83.7	336
Virgin Islands	21,193	1	0	0.0	34
Virginia	985,346	136	10	7.4	1,779
Washington	810,232	296	159	53.7	1,858
West Virginia	327,540	55	0	0.0	1,035
Wisconsin	782,905	429	229	53.4	2,019
Wyoming	97,172	49	24	49.0	404
U.S. Total	41,198,790	15,368	8,212	53.4	85,120

Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Survey, Public School Universe, 1989–1990, April 1991.

TABLE 2—SCHOOL AGE POPULATION AGE 5–17 YEARS

	School Age Population				
	1979	1984	1989	% Change 1979–89	% Change 1984–89
Alabama	841,000	813,000	811,000	-3.6	-0.2
Alaska	103,000	104,000	110,000	6.8	5.8
Arizona	538,000	583,000	671,000	24.7	15.1
Arkansas	471,000	469,000	476,000	1.1	1.5
California	4,583,000	4,675,000	5,225,000	14.0	11.8
Colorado	583,000	591,000	602,000	3.3	1.9
Connecticut	645,000	561,000	532,000	-17.5	-5.2
Delaware	125,000	116,000	119,000	-4.8	2.6
District of Columbia	130,000	90,000	91,000	-30.0	1.1
Florida	1,660,000	1,777,000	1,985,000	19.6	11.7
Georgia	1,161,000	1,204,000	1,286,000	10.8	6.8
Hawaii	198,000	193,000	199,000	0.5	0.0
Idaho	203,000	221,000	225,000	10.8	0.0
Illinois	2,426,000	2,209,000	2,116,000	-12.8	-4.2
Indiana	1,201,000	1,100,000	1,065,000	-11.3	-3.2
Iowa	619,000	550,000	519,000	-16.2	-5.6
Kansas	475,000	448,000	468,000	-1.5	4.5
Kentucky	770,000	754,000	716,000	-7.0	-5.0
Louisiana	952,000	939,000	911,000	-4.3	-3.0
Maine	241,000	223,000	220,000	-8.7	-1.3
Maryland	893,000	800,000	803,000	-10.1	0.4
Massachusetts	1,193,000	999,000	924,000	-22.5	-7.5
Michigan	2,087,000	1,846,000	1,761,000	-15.6	-4.6
Minnesota	883,000	791,000	801,000	-9.3	1.3
Mississippi	591,000	577,000	566,000	-4.2	-1.9
Missouri	1,009,000	935,000	936,000	-7.2	0.1
Montana	173,000	163,000	158,000	-8.7	-3.1
Nebraska	333,000	303,000	305,000	-8.4	0.7
Nevada	152,000	164,000	191,000	25.7	16.5
New Hampshire	193,000	184,000	195,000	1.0	6.0
New Jersey	1,549,000	1,365,000	1,286,000	-17.0	-5.8
New Mexico	294,000	300,000	320,000	8.8	6.7
New York	3,664,000	3,223,000	3,044,000	-16.9	-5.6
North Carolina	1,215,000	1,191,000	1,179,000	-3.0	-1.0
North Dakota	144,000	133,000	129,000	-10.4	-3.0
Ohio	2,339,000	2,114,000	2,036,000	-13.0	-3.7
Oklahoma	594,000	630,000	619,000	4.2	-1.7
Oregon	509,000	500,000	503,000	-1.2	0.6
Pennsylvania	2,395,000	2,135,000	2,039,000	-14.9	-4.5
Rhode Island	193,000	167,000	162,000	-16.1	-3.0
South Carolina	672,000	674,000	690,000	2.7	2.4
South Dakota	150,000	136,000	140,000	-6.7	2.9
Tennessee	933,000	924,000	915,000	-1.9	-1.0
Texas	2,971,000	3,296,000	3,474,000	16.9	5.4
Utah	331,000	408,000	456,000	37.8	11.8
Vermont	109,000	101,000	101,000	-7.3	0.0
Virginia	1,097,000	1,033,000	1,039,000	-5.3	0.6
Washington	815,000	805,000	859,000	5.4	6.7
West Virginia	397,000	393,000	353,000	-11.1	-10.2
Wisconsin	1,027,000	926,000	899,000	-12.5	-2.9
Wyoming	97,000	107,000	100,000	3.1	-6.5
U.S. Total	46,927,000	44,443,000	45,330,000	-3.4	2.0

Note: Data are based on "resident" population figures which include Armed Forces Personnel.
Source: U.S. Bureau of the Census ,Current Population Reports, Series P-25, No. 1058, "State Population and Household Estimates: July 1, 1989." Data for 1984 were generated by the U.S. Bureau of the Census and are consistent with Current Population Reports Series P-25, No. 1044, U.S. Bureau of the Census, Current Population Reports, Series P-25 No. 875.

12

TABLE 3—SCHOOL AGE POPULATION (AGE 5–17 YEARS) AS A PERCENT OF THE TOTAL POPULATION

	1979	1984	1989	Change 1979–89	Change 1984–89
Alabama	22.3%	20.4%	19.7%	-2.6	-0.7
Alaska	25.4%	20.6%	20.9%	-4.5	0.3
Arizona	22.0%	19.1%	18.9%	-3.1	-0.3
Arkansas	21.6%	20.0%	19.8%	-1.8	-0.2
California	20.2%	18.1%	18.0%	-2.2	-0.2
Colorado	21.0%	18.5%	18.1%	-2.9	-0.4
Connecticut	20.7%	17.8%	16.4%	-4.3	-1.3
Delaware	21.5%	18.8%	17.7%	-3.8	-1.1
District of Columbia	19.8%	14.4%	15.1%	-4.8	0.6
Florida	18.7%	16.1%	15.7%	-3.1	-0.4
Georgia	22.7%	20.6%	20.0%	-2.7	-0.6
Hawaii	21.6%	18.6%	17.9%	-3.7	-0.7
Idaho	22.4%	22.1%	22.2%	-0.2	0.1
Illinois	21.6%	19.2%	18.2%	-3.5	-1.0
Indiana	22.2%	20.0%	19.0%	-3.2	-1.0
Iowa	21.3%	19.0%	18.3%	-3.1	-0.7
Kansas	20.1%	18.4%	18.6%	-1.4	0.3
Kentucky	21.8%	20.3%	19.2%	-2.6	-1.1
Louisiana	23.7%	21.0%	20.8%	-2.9	-0.3
Maine	22.0%	19.3%	18.0%	-4.0	-1.3
Maryland	21.5%	18.4%	17.1%	-4.4	-1.3
Massachusetts	20.7%	17.2%	15.6%	-5.1	-1.6
Michigan	22.7%	20.4%	19.0%	-3.7	-1.4
Minnesota	21.7%	19.0%	18.4%	-3.3	-0.6
Mississippi	24.3%	22.2%	21.6%	-2.7	-0.6
Missouri	20.7%	18.7%	18.1%	-2.6	-0.5
Montana	22.0%	19.8%	19.6%	-2.4	-0.2
Nebraska	21.2%	18.9%	18.9%	-2.2	0.1
Nevada	21.7%	17.9%	17.2%	-4.5	-0.7
New Hampshire	21.8%	18.8%	17.6%	-4.1	-1.2
New Jersey	21.1%	18.2%	16.6%	-4.5	-1.5
New Mexico	23.7%	21.0%	20.9%	-2.7	-0.1
New York	20.8%	18.2%	17.0%	-3.8	-1.2
North Carolina	21.7%	19.3%	17.9%	-3.7	-1.4
North Dakota	21.9%	19.4%	19.5%	-2.4	0.2
Ohio	21.8%	19.6%	18.7%	-3.1	-1.0
Oklahoma	20.5%	19.0%	19.2%	-1.3	0.2
Oregon	20.1%	18.7%	17.8%	-2.3	-0.8
Pennsylvania	20.4%	18.0%	16.9%	-3.5	-1.0
Rhode Island	20.8%	17.4%	16.2%	-4.5	-1.2
South Carolina	22.9%	20.4%	19.6%	-3.3	-0.8
South Dakota	21.8%	19.3%	19.6%	-2.2	0.3
Tennessee	21.3%	19.5%	18.5%	-2.8	-1.0
Texas	22.2%	20.5%	20.4%	-1.8	-0.0
Utah	24.2%	25.1%	26.7%	2.5	1.6
Vermont	22.1%	19.1%	17.8%	-4.3	-1.2
Virginia	21.1%	18.3%	17.0%	-4.1	-1.3
Washington	20.8%	18.5%	18.0%	-2.7	-0.5
West Virginia	21.1%	20.1%	19.0%	-2.1	-1.1
Wisconsin	21.8%	19.4%	18.5%	-3.3	-1.0
Wyoming	21.6%	20.9%	21.1%	-0.5	0.2
U.S. Average	21.6%	19.0%	18.3%	-3.3	-0.7

Note: Percentages are consistent with estimates provided by the U.S. Bureau of the Census Current Population Reports, Series P-25, Nos. 875,1044, and 1058.

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TABLE 4—PERCENT MINORITY OF POPULATION AGE 5–17 YEARS: 1980

	Non-White*	White
Alabama	32.2	67.8
Alaska	7.5	92.5
Arizona	25.4	74.6
Arkansas	23.3	76.7
California	33.6	66.4
Colorado	19.3	80.7
Connecticut	15.3	84.7
Delaware	23.2	76.8
District of Columbia	89.0	11.0
Florida	28.5	71.5
Georgia	33.4	66.6
Hawaii	28.5	71.5
Idaho	5.4	94.6
Illinois	25.7	74.3
Indiana	11.3	88.7
Iowa	3.1	96.9
Kansas	10.5	89.5
Kentucky	8.7	91.3
Louisiana	37.4	62.6
Maine	0.9	99.1
Maryland	29.6	70.4
Massachusetts	8.7	91.3
Michigan	18.1	81.9
Minnesota	2.8	97.2
Mississippi	44.4	55.6
Missouri	14.7	85.3
Montana	2.2	97.8
Nebraska	6.8	93.2
Nevada	17.6	82.4
New Hampshire	1.2	98.8
New Jersery	24.4	75.6
New Mexico	39.8	60.2
New York	27.9	72.1
North Carolina	29.3	70.7
North Dakota	1.2	98.8
Ohio	13.2	86.8
Oklahoma	12.0	88.0
Oregon	5.4	94.6
Pennsylvania	12.8	87.2
Rhode Island	6.7	93.3
South Carolina	38.4	61.6
South Dakota	1.2	98.8
Tennessee	20.3	79.7
Texas	36.2	63.8
Utah	5.7	94.3
Vermont	0.9	99.1
Virginia	24.2	75.8
Washington	7.3	92.7
West Virginia	4.3	95.7
Wisconsin	7.3	92.7
Wyoming	7.5	92.5
U.S. Average	22.6	77.4

Notes: *Non-white is the total of persons age 5–17 years who are Black or of Spanish Origin. Persons of Spanish Origin may be of any race.
Source: U.S. Bureau of the Census, "United States Summary: General Social and Economic Characteristics: 1980," Table 245. Data are estimates based on a sample taken during the decennial census.

14

TABLE 5—STUDENTS AT RISK OF SCHOOL FAILURE

	Births to Teenage Mothers: 1988 [1]	% of Mothers 18–19 Years Of Age with Less Than 12 Years of School: 1988 [2]	% of Children Under 18 Years of Age In Households Below the Poverty Line: 1985–89 [3]	Students in State Identified As Limited English Proficient: 1989 [4]
Alabama	10,597	48.9	30.9	(3)
Alaska	1,049	36.6	13.7	11,489 (4)
Arizona	9,059	51.5	20.2	48,849 (4)
Arkansas	6,606	43.6	29.2	(3)
California	58,950	(1)	21.3	742,559
Colorado	5,690	46	17.6	14,200
Connecticut	4,124	48.3	8.3	14,000
Delaware	1,329	42.7	15.3	866
District of Columbia	1,854	44.2	28.5	3,093
DoDDS	—	—	—	—
Florida	25,292	53.4	20	49,958
Georgia	17,457	50.4	23.8	4,748
Hawaii	1,786	26.5	16.7	8,725
Idaho	1,827	43.7	18.7	2,503
Illinois	23,183	45.2	21.7	62,032
Indiana	11,488	45.5	17.2	2,964
Iowa	3,541	35.6	17.8	3,190
Kansas	4,416	42.3	14.2	3,586
Kentucky	8,827	47.5	22.2	1,120
Louisiana	12,381	45.8	32.4	10,127
Maine	1,864	44.9	15.6	1,601
Maryland	8,451	40.9	13.6	9,339
Massachusetts	7,273	50.9	14.4	36,329
Michigan	17,460	46.9	20.3	33,855 (4)
Minnesota	4,851	37.5	18.2	10,159
Mississippi	10,456	44.5	34.3	2,713
Missouri	8,704	45.4	18.9	2,779
Montana	1,156	44.7	22.2	3,877
Nebraska	2,213	32.2	18.4	778
Nevada	2,252	45.6	15.4	5,175
New Hampshire	1,301	51.9	5.8	740
New Jersey	10,515	43.6	13.1	38,833
New Mexico	4,248	45.1	27.8	65,008
New York	26,487	(2)	22.6	158,011
North Carolina	15,629	48.7	18.3	3,080
North Dakota	765	31.2	15.7	4,597
Ohio	21,738	42.6	19.1	8,145
Oklahoma	7,581	44.6	21.7	5,776
Oregon	4,578	49.5	15.7	6,578
Pennsylvannia	18,137	40	15.7	(3)
Puerto Rico	—	—	—	171,231
Rhode Island	1,458	56.9	12.3	5,934
South Carolina	9,248	47.4	22.2	(3)
South Dakota	1,191	36.9	20.1	3,710
Tennesse	12,153	49.9	25.7	2,829
Texas	46,113	(1)	24.5	298,547
Utah	3,358	42.3	12.3	17,444
Vermont	722	41.4	13.1	550
Virgin Islands	—	—	—	2,180
Virginia	10,428	46.6	15.6	(3)
Washington	7,653	(1)	16	21,062
West Virginia	3,688	48.8	28	(3)
Wisconsin	6,950	44.5	13	10,447
Wyoming	858	35.7	15.4	2,150
U.S. Total/Average	488,935	44.21	19.11	1,823,291

Notes: "—" Data not collected.
1. California, Texas, and Washington do not require education of mother on the birth certificate.
2. Only New York City reports the education of the mother on the birth certificate.
3. Received no Title 7 funding. No response required.
4. May not be the 1988–89 data.
Sources: (1) Compiled from the National Center for Health Statistics: "Vital Statistics of the United States,1988", Vol.1, Natality. Table 1–60. (2) Compiled from the National Center for Health Statistics; unpublished data, Division of Vital Statistics. (3) Population Reference Bureau analysis of the U.S. Bureau of the Census March Supplement Current Population Survey tapes 1985–1990. (4) Office of Bilingual Education and Minority Language Affairs; SEA Title 7 Data Report Summary Counts,School Year 1988–89.

TABLE 6—PER CAPITA INCOME AND HIGH SCHOOL ATTAINMENT

	Per Capita Income			
	1988	1989	% Change 1988–89	% Adults With Four Years Of High School: 1980
Alabama	$12,814	$13,625	6.30	56.50%
Alaska	19,237	21,656	12.60	82.50%
Arizona	14,995	15,802	5.40	72.40%
Arkansas	12,141	12,901	6.30	55.50%
California	18,915	19,929	5.40	73.50%
Colorado	16,471	17,553	6.60	78.60%
Connecticut	23,190	24,683	6.40	70.30%
Delaware	17,347	18,483	6.50	68.60%
District of Columbia	22,063	23,491	6.50	68.00%
Florida	16,515	17,647	6.90	66.70%
Georgia	15,280	16,053	5.10	56.40%
Hawaii	16,840	18,472	9.70	73.80%
Idaho	12,652	13,707	8.30	73.70%
Illinois	17,567	18,824	7.20	66.50%
Indiana	14,721	15,779	7.20	66.40%
Iowa	14,316	15,487	8.20	71.50%
Kansas	15,688	16,498	5.20	73.30%
Kentucky	12,792	13,743	7.40	53.10%
Louisiana	12,238	12,921	5.60	57.70%
Maine	15,045	16,248	8.00	68.70%
Maryland	19,639	21,013	7.00	67.40%
Massachusetts	20,898	22,174	6.10	72.20%
Michigan	16,391	17,444	6.40	68.00%
Minnesota	16,472	17,657	7.20	73.10%
Mississippi	11,055	11,724	6.10	54.80%
Missouri	15,331	16,292	6.30	63.50%
Montana	12,870	14,078	9.40	74.40%
Nebraska	14,569	15,446	6.00	73.40%
Nevada	17,849	19,269	8.00	75.50%
New Hampshire	19,410	20,267	4.40	72.30%
New Jersey	22,265	23,778	6.80	67.40%
New Mexico	12,401	13,140	6.00	68.90%
New York	19,663	21,073	7.20	66.30%
North Carolina	14,243	15,198	6.70	54.80%
North Dakota	12,342	13,563	9.90	66.40%
Ohio	15,427	16,373	6.10	67.00%
Oklahoma	13,306	14,154	6.40	66.00%
Oregon	14,811	15,919	7.50	75.60%
Pennsylvania	16,135	17,269	7.00	64.70%
Rhode Island	16,870	17,950	6.40	61.60%
South Carolina	12,907	13,634	5.60	54.00%
South Dakota	12,599	13,685	8.60	67.90%
Tennessee	13,895	14,694	5.80	56.20%
Texas	14,753	15,702	6.40	62.60%
Utah	12,225	13,079	7.00	80.00%
Vermont	15,268	16,371	7.20	71.00%
Virginia	17,712	18,927	6.90	62.40%
Washington	16,364	17,647	7.80	77.60%
West Virginia	11,578	12,345	6.60	56.00%
Wisconsin	15,378	16,449	7.00	69.60%
Wyoming	13,720	14,508	5.70	77.90%
U.S. Total	16,523	17,596	6.60	67.49%

Source: U.S. Department of Commerce, Bureau of Economic Analysis, "State Per Capita Personal Income Growth in 1989," News Release BEA 90-36. U.S. Bureau of the Census, "State and Metropolitan Area Data Book, 1986, "Table C- Earned Degrees and Educational Attainment

16

TABLE 7—PLACE OF RESIDENCE (IN THOUSANDS)

	In Metropolitan Areas			In Nonmetropolitan Areas		
	1980	1988	Change 1980–88	1980	1988	Change 1980–88
Alabama	2,583	2,768	7.2%	1,311	1,335	1.8%
Alaska	174	219	25.9%	227	306	34.8%
Arizona	2,041	2,666	30.6%	676	822	21.6%
Arkansas	885	950	7.3%	1,401	1,445	3.1%
California	22,689	27,091	19.4%	979	1,223	24.9%
Colorado	2,326	2,698	16.0%	563	604	7.3%
Connecticut	2,879	2,992	3.9%	228	241	5.7%
Delaware	398	435	9.3%	196	225	14.8%
District of Columbia	638	617	-3.3%	—	—	—
Florida	8,884	11,195	26.0%	863	1,140	32.1%
Georgia	3,403	4,111	20.8%	2,060	2,230	8.3%
Hawaii	763	838	9.8%	202	260	28.7%
Idaho	173	201	16.2%	771	802	4.0%
Illinois	9,340	9,587	2.6%	2,088	2,028	-2.9%
Indiana	3,719	3,784	1.7%	1,771	1,773	0.1%
Iowa	1,223	1,230	0.6%	1,691	1,603	-5.2%
Kansas	1,184	1,333	12.6%	1,180	1,162	-1.5%
Kentucky	1,676	1,717	2.4%	1,984	2,009	1.3%
Louisiana	2,893	3,050	5.4%	1,313	1,358	3.4%
Maine	405	435	7.4%	720	771	7.1%
Maryland	3,920	4,296	9.6%	297	326	9.8%
Massachusetts	5,231	5,334	2.0%	506	555	9.7%
Michigan	7,480	7,385	-1.3%	1,782	1,855	4.1%
Minnesota	2,621	2,868	9.4%	1,455	1,439	-1.1%
Mississippi	716	799	11.6%	1,805	1,821	0.9%
Missouri	3,226	3,396	5.3%	1,690	1,746	3.3%
Montana	189	195	3.2%	598	610	2.0%
Nebraska	708	762	7.6%	862	840	-2.6%
Nevada	657	871	32.6%	144	183	27.1%
New Hampshire	511	611	19.6%	410	474	15.6%
New Jersey	7,365	7,721	4.8%	—	—	—
New Mexico	610	738	21.0%	694	769	10.8%
New York	16,016	16,341	2.0%	1,542	1,569	1.8%
North Carolina	3,203	3,594	12.2%	2,677	2,894	8.1%
North Dakota	234	256	9.4%	408	411	0.7%
Ohio	8,521	8,563	0.5%	2,277	2,292	0.7%
Oklahoma	1,724	1,905	10.5%	1,301	1,337	2.8%
Oregon	1,763	1,874	6.3%	870	893	2.6%
Pennsylvania	10,038	10,172	1.3%	1,826	1,830	0.2%
Rhode Island	878	920	4.8%	69	73	5.8%
South Carolina	1,866	2,099	12.5%	1,254	1,370	9.3%
South Dakota	180	208	15.6%	511	506	-1.0%
Tennessee	3,048	3,283	7.7%	1,543	1,612	4.5%
Texas	11,304	13,684	21.1%	2,921	3,153	7.9%
Utah	1,128	1,308	16.0%	333	382	14.7%
Vermont	115	129	12.2%	396	428	8.1%
Virginia	3,745	4,342	15.9%	1,601	1,673	4.5%
Washington	3,322	3,791	14.1%	810	856	5.7%
West Virginia	718	685	-4.6%	1,232	1,192	-3.2%
Wisconsin	3,145	3,229	2.7%	1,561	1,625	4.1%
Wyoming	141	140	-0.7%	329	339	3.0%
U.S. Total/Average	172,602	189,413	9.7%	53,940	56,390	4.5%

Note: Figures are in thousands unless otherwise noted. "—" indicates there are no nonmetropolitan areas within that jurisdiction.
Source: U.S. Bureau of the Census, Statistical Abstract of the United States: 1990 (110th edition). Washington, D.C., 1990.

TABLE 8—POPULATION DENSITY

	Population Per Square Mile		
	1980	1988	Change 1980–88
Alabama	76.7	80.8	5.4%
Alaska	0.7	0.9	30.5%
Arizona	23.9	30.7	28.4%
Arkansas	43.9	46.0	4.7%
California	151.4	181.2	19.6%
Colorado	27.9	31.9	14.2%
Connecticut	637.8	663.6	4.0%
Delaware	307.6	341.7	11.1%
District of Columbia	10,132.0	9,792.0	-3.4%
Florida	180.0	227.8	26.6%
Georgia	94.1	109.2	16.1%
Hawaii	150.1	170.9	13.8%
Idaho	11.5	12.2	6.2%
Illinois	205.3	208.7	1.6%
Indiana	152.8	154.6	1.2%
Iowa	52.1	50.6	-2.7%
Kansas	28.9	30.5	5.6%
Kentucky	92.3	93.9	1.8%
Louisiana	94.5	99.0	4.8%
Maine	36.3	38.9	7.2%
Maryland	428.7	469.9	9.6%
Massachusetts	733.3	752.7	2.7%
Michigan	162.6	162.2	-0.2%
Minnesota	51.2	54.1	5.7%
Mississippi	53.4	55.5	3.9%
Missouri	71.3	74.6	4.6%
Montana	5.4	5.5	2.3%
Nebraska	20.5	20.9	2.1%
Nevada	7.3	9.6	31.7%
New Hampshire	102.4	120.7	17.9%
New Jersery	986.2	1,033.9	4.8%
New Mexico	10.7	12.4	15.6%
New York	370.6	378.0	2.0%
North Carolina	120.4	132.9	10.3%
North Dakota	9.4	9.6	2.2%
Ohio	263.3	264.7	0.5%
Oklahoma	44.1	47.2	7.2%
Oregon	27.4	28.8	5.1%
Pennsylvania	264.3	267.4	1.2%
Rhode Island	897.8	940.9	4.8%
South Carolina	103.4	114.9	11.2%
South Dakota	9.1	9.4	3.2%
Tennessee	111.6	118.9	6.6%
Texas	54.3	64.3	18.4%
Utah	17.8	20.6	15.7%
Vermont	55.2	60.1	8.9%
Virginia	134.7	151.5	12.5%
Washington	62.1	69.9	12.5%
West Virginia	80.8	77.8	-3.7%
Wisconsin	86.5	89.2	3.1%
Wyoming	4.8	4.9	2.1%
U.S. Average	64.0	69.5	8.5%

Source: U.S. Bureau of the Census, "Statistical Abstract of the United States: 1990" (110th edition.) Washington, D.C.1990, Table 26.

18

TABLE 9—VOTING PATTERNS

	% Voting For President			% Voting For Congress		
	1984	1988	Change 1984–88	1986	1988	Change 1986–88
Alabama	49.9%	45.8%	-4.1	37.8%	39.3%	1.5
Alaska	59.3%	52.0%	-7.3	50.4%	53.8%	3.4
Arizona	45.2%	45.0%	-0.2	33.5%	44.2%	10.7
Arkansas*	51.8%	47.0%	-4.8	38.4%	34.6%	-3.8
California	49.6%	47.4%	-2.2	35.9%	44.7%	8.8
Colorado	55.0%	55.1%	0.1	42.3%	53.9%	11.6
Connecticut	61.1%	57.9%	-3.2	41.2%	54.1%	12.9
Delaware	55.5%	51.1%	-4.4	33.7%	47.1%	13.4
District of Columbia	43.1%	39.4%	-3.7	26.1%	36.2%	10.1
Florida*	48.2%	44.7%	-3.5	23.4%	31.6%	8.2
Georgia	42.0%	38.8%	-3.2	24.0%	36.4%	12.4
Hawaii	44.3%	43.0%	-1.3	42.2%	41.7%	-0.5
Idaho	59.9%	58.4%	-1.5	54.1%	57.9%	3.8
Illinois	57.1%	53.3%	-3.8	35.4%	50.3%	14.9
Indiana	55.9%	53.3%	-2.6	38.5%	51.6%	13.1
Iowa	62.2%	59.3%	-2.9	42.3%	55.9%	13.6
Kansas	56.8%	54.3%	-2.5	43.3%	50.4%	7.1
Kentucky	50.8%	48.2%	-2.6	23.2%	40.2%	17.0
Louisiana	54.5%	51.3%	-3.2	12.4%	6.6%	-5.8
Maine	64.7%	61.1%	-3.6	48.2%	61.1%	12.9
Maryland	51.4%	49.1%	-2.3	31.5%	44.6%	13.1
Massachusetts	57.6%	58.1%	0.5	33.4%	51.9%	18.5
Michigan	57.9%	54.0%	-3.9	34.7%	50.8%	16.1
Minnesota	68.2%	66.3%	-1.9	44.7%	61.5%	16.8
Mississippi	52.2%	51.1%	-1.1	28.7%	49.8%	21.1
Missouri	57.3%	54.8%	-2.5	37.9%	53.9%	16.0
Montana	65.0%	62.5%	-2.5	54.1%	62.3%	8.2
Nebraska	55.6%	56.7%	1.1	47.4%	55.5%	8.1
Nevada	41.6%	44.9%	3.3	35.1%	42.8%	7.7
New Hampshire	53.0%	54.8%	1.8	31.1%	52.6%	21.5
New Jersey	56.6%	52.1%	-4.5	26.7%	47.1%	20.4
New Mexico	51.3%	47.3%	-4.0	37.1%	42.2%	5.1
New York	51.2%	48.1%	-3.1	29.0%	40.6%	11.6
North Carolina	47.4%	43.4%	-4.0	33.2%	40.7%	7.5
North Dakota	62.7%	61.5%	-1.2	58.7%	62.0%	3.3
Ohio	58.0%	55.1%	-2.9	38.6%	52.4%	13.8
Oklahoma*	52.2%	48.7%	-3.5	30.3%	32.4%	2.1
Oregon	61.9%	58.6%	-3.3	51.0%	48.8%	-2.2
Pennsylvania	54.0%	50.1%	-3.9	36.5%	45.8%	9.3
Rhode Island	55.7%	53.0%	-2.7	40.7%	51.1%	10.4
South Carolina	40.7%	38.9%	-1.8	29.2%	39.2%	10.0
South Dakota	62.6%	61.5%	-1.1	56.7%	60.2%	3.5
Tennessee	49.1%	44.7%	-4.4	31.0%	38.5%	7.5
Texas	47.2%	44.2%	-3.0	25.6%	39.2%	13.6
Utah	61.6%	60.0%	-1.6	40.9%	57.1%	16.2
Vermont	39.9%	39.0%	-0.9	46.9%	57.2%	10.3
Virginia	50.7%	48.2%	-2.5	23.8%	41.4%	17.6
Washington	58.4%	54.6%	-3.8	38.9%	49.6%	10.7
West Virginia	51.8%	46.7%	-5.1	28.0%	40.7%	12.7
Wisconsin	63.5%	62.0%	-1.5	39.3%	56.6%	17.3
Wyoming	53.3%	50.4%	-2.9	45.7%	52.4%	6.7
U.S. Average	53.1%	50.1%	-3.0	33.4%	44.8%	11.4

Notes: (*) denotes states that do not require tabulation of votes for unopposed candidates.
Source: U.S. Bureau of the Census, Projections of the Voting Age Population for States, "Population Estimates and Projections", series P-25, No. 1059.

TABLE 10—STATE RESOURCES

	Gross State Product				Relative Tax Capacity Index (U.S. = 100)		
	1986 Total (in millions)	1985 G.S.P. Per School-Age Child	1986 G.S.P. Per School-Age Child	Percent Change 1985–86	1985	1986	Change 1985–86
Alabama	$55,007	$63,704	$67,081	5.0%	75	74	-1.0
Alaska	$19,575	196,638	176,351	-11.5%	259	177	-82.0
Arizona	$53,253	80,445	84,662	5.0%	99	99	0.0
Arkansas	$31,633	63,537	67,019	5.2%	74	78	4.0
California	$533,816	104,533	109,523	4.6%	120	118	-2.0
Colorado	$59,177	95,476	98,792	3.4%	118	117	-1.0
Connecticut	$70,639	116,779	128,668	9.2%	127	135	8.0
Delaware	$11,706	96,192	101,791	5.5%	123	121	-2.0
District of Columbia	$28,791	302,055	316,384	4.5%	123	122	-1.0
Florida	$177,729	91,198	96,173	5.2%	103	105	2.0
Georgia	$102,922	76,896	82,668	7.0%	90	94	4.0
Hawaii	$19,320	92,276	98,571	6.4%	117	113	-4.0
Idaho	$13,170	58,417	59,058	1.1%	78	77	-1.0
Illinois	$209,666	90,432	95,869	5.7%	96	96	0.0
Indiana	$84,922	73,500	78,341	6.2%	87	87	0.0
Iowa	$43,836	76,406	80,729	5.4%	84	84	0.0
Kansas	$42,472	89,498	93,757	4.5%	99	96	-3.0
Kentucky	$53,135	68,312	71,322	4.2%	78	76	-2.0
Louisiana	$74,426	84,807	78,591	-7.9%	97	90	-7.0
Maine	$17,326	71,603	78,754	9.1%	89	95	6.0
Maryland	$76,504	89,341	97,086	8.0%	105	108	3.0
Massachusetts	$115,526	108,535	120,339	9.8%	113	124	11.0
Michigan	$153,240	78,750	84,709	7.0%	94	96	2.0
Minnesota	$75,626	90,333	96,216	6.1%	101	102	1.0
Mississippi	$31,830	53,044	54,596	2.8%	69	65	-4.0
Missouri	$83,534	84,636	88,960	4.9%	91	93	2.0
Montana	$12,163	70,384	74,619	5.7%	91	88	-3.0
Nebraska	$26,521	84,617	87,817	3.6%	94	91	-3.0
Nevada	$19,426	107,939	116,323	7.2%	146	147	1.0
New Hampshire	$18,518	90,135	99,026	9.0%	112	119	7.0
New Jersey	$154,765	105,722	116,189	9.0%	117	121	4.0
New Mexico	$23,603	78,834	76,385	-3.2%	99	91	-8.0
New York	$362,736	105,583	115,337	8.5%	101	107	6.0
North Carolina	$100,961	78,774	84,698	7.0%	86	88	2.0
North Dakota	$10,733	80,639	81,310	0.8%	102	94	-8.0
Ohio	$176,102	80,097	84,868	5.6%	91	91	0.0
Oklahoma	$49,814	79,814	78,819	-1.3%	105	98	-7.0
Oregon	$41,278	78,000	83,558	6.7%	95	93	-2.0
Pennsylvania	$183,559	82,494	88,504	6.8%	89	90	1.0
Rhode Island	$15,205	85,128	92,713	8.2%	88	92	4.0
South Carolina	$44,727	61,881	65,582	5.6%	77	79	2.0
South Dakota	$9,802	67,861	71,028	4.5%	82	82	0.0
Tennessee	$72,328	73,275	78,361	6.5%	83	84	1.0
Texas	$303,510	91,524	88,358	-3.6%	111	104	-7.0
Utah	$24,008	55,303	55,703	0.7%	81	80	-1.0
Vermont	$8,636	79,150	86,360	8.3%	97	99	2.0
Virginia	$104,155	92,681	101,121	8.3%	98	101	3.0
Washington	$77,683	88,260	95,083	7.2%	101	98	-3.0
West Virginia	$24,096	60,672	63,078	3.8%	77	76	-1.0
Wisconsin	$76,922	79,297	84,159	5.8%	89	86	-3.0
Wyoming	$11,673	120,537	109,093	-10.5%	169	151	-18.0
U.S. Total	$4,191,705	$88,123	$92,853	5.0%	100	100	0

Notes: Gross State Product Per School Age Child figures are calculated using 1985 and 1986 Census Data for resident persons age 5–17 years.
Sources: Gross State Product figures are from the U.S. Department of Commerce publication "Survey of Current Business," Volume 68, No. 5, May 1988. State Tax Capacity figures are from the Advisory Commission on Intergovernment Relations' Fiscal Capacity Diskettes for 1987. School-age child figures are from the U.S. Bureau of the Census "Current Population Reports", Series P-25, No. 1024.

20

TABLE 11—PUBLIC SCHOOL MEMBERSHIP AND EDUCATION EXPENDITURE PER PUPIL, BY REGION: 1989

		Public School Membership as a % of 5–17 Years: 1989	Education Expenditure/Pupil Fiscal 1989
NEW ENGLAND	Connecticut	86.76%	6,479
	Maine	97.17%	4,330
	Massachusetts	89.35%	5,492
	New Hampshire	88.05%	4,328
	Rhode Island	83.78%	5,517
	Vermont	93.84%	5,196
MIDDLE ATLANTIC	Delaware	82.19%	4,958
	District of Columbia	89.34%	6,888
	Maryland	87.02%	5,088
	New Jersey	83.67%	6,762
	New York	84.29%	6,655
	Pennsylvania	81.18%	5,180
MIDWEST	Illinois	84.94%	4,265
	Indiana	89.59%	3,933
	Michigan	89.54%	4,734
	Minnesota	92.33%	4,515
	Ohio	86.80%	4,175
	Wisconsin	87.09%	4,760
WEST NORTH CENTRAL	Iowa	92.19%	4,027
	Kansas	92.06%	4,014
	Missouri	86.32%	3,839
	Nebraska	88.83%	4,101
	North Dakota	91.33%	3,635
	South Dakota	90.95%	3,369
SOUTH ATLANTIC	Florida	89.29%	4,210
	Georgia	87.60%	3,616
	North Carolina	91.67%	3,594
	South Carolina	89.30%	3,441
	Virginia	94.84%	4,225
	West Virginia	92.79%	3,580
EAST SOUTH CENTRAL	Alabama	89.19%	3,019
	Kentucky	88.08%	3,009
	Mississippi	88.70%	2,726
	Tennessee	89.58%	3,248
WEST SOUTH CENTRAL	Arkansas	91.38%	3,023
	Louisiana	85.95%	3,138
	Oklahoma	93.47%	3,159
	Texas	95.81%	3,582
MOUNTAIN	Arizona	90.55%	3,728
	Colorado	93.48%	4,047
	Idaho	95.53%	2,661
	Montana	95.74%	3,893
	Nevada	97.82%	3,486
	New Mexico	92.52%	3,336
	Utah	95.93%	2,413
	Wyoming	97.17%	5,030
PACIFIC	Alaska	99.35%	6,940
	California	91.33%	4,194
	Hawaii	85.17%	3,841
	Oregon	93.92%	4,598
	Washington	94.32%	4,051

Sources: U.S. Bureau of the Census, Current Population Reports series P-25, No. 1058, "State Population and Household Estimates: July 1, 1989." U.S. Department of Education, NCES, Common Core of Data, Public School Universe 1989–90, April 1991. U.S. Department of Education, National Center for Education Statistics, Common Core of Data, "The National Public Education Financial Survey," September, 1990.

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CHART 1 - RELATIVE WEALTH BY STATE VERSUS

	STATE	G.S.P. Per School-Age Child: 1986
HIGH RELATIVE WEALTH	District of Columbia	$316,385
	Alaska	$176,351
	Connecticut	$128,668
	Massachusetts	$120,340
	Nevada	$116,323
	New Jersey	$116,190
	New York	$115,377
	California	$109,523
	Wyoming	$109,093
MODERATELY HIGH RELATIVE WEALTH	Delaware	$101,791
	Virginia	$101,121
	New Hampshire	$99,027
	Colorado	$98,793
	Hawaii	$98,571
	Maryland	$97,086
	Minnesota	$96,216
	Florida	$96,174
	Illinois	$95,869
	Washington	$95,083
MODERATE RELATIVE WEALTH	Kansas	$93,757
	Rhode Island	$92,713
	Missouri	$88,961
	Pennsylvania	$88,505
	Texas	$88,358
	Nebraska	$87,818
	Vermont	$86,360
	Ohio	$84,868
	Michigan	$84,710
	North Carolina	$84,699
	Arizona	$84,663
	Wisconsin	$84,160
MODERATELY LOW RELATIVE WEALTH	Oregon	$83,559
	Georgia	$82,668
	North Dakota	$81,311
	Iowa	$80,729
	Oklahoma	$78,820
	Maine	$78,755
	Louisiana	$78,591
	Tennessee	$78,362
	Indiana	$78,341
	New Mexico	$76,385
LOW RELATIVE WEALTH	Montana	$74,620
	Kentucky	$71,322
	South Dakota	$71,029
	Alabama	$67,082
	Arkansas	$67,019
	South Carolina	$65,582
	West Virginia	$63,079
	Idaho	$59,058
	Utah	$55,703
	Mississippi	$54,597

EDUCATION EXPENDITURE PER PUPIL

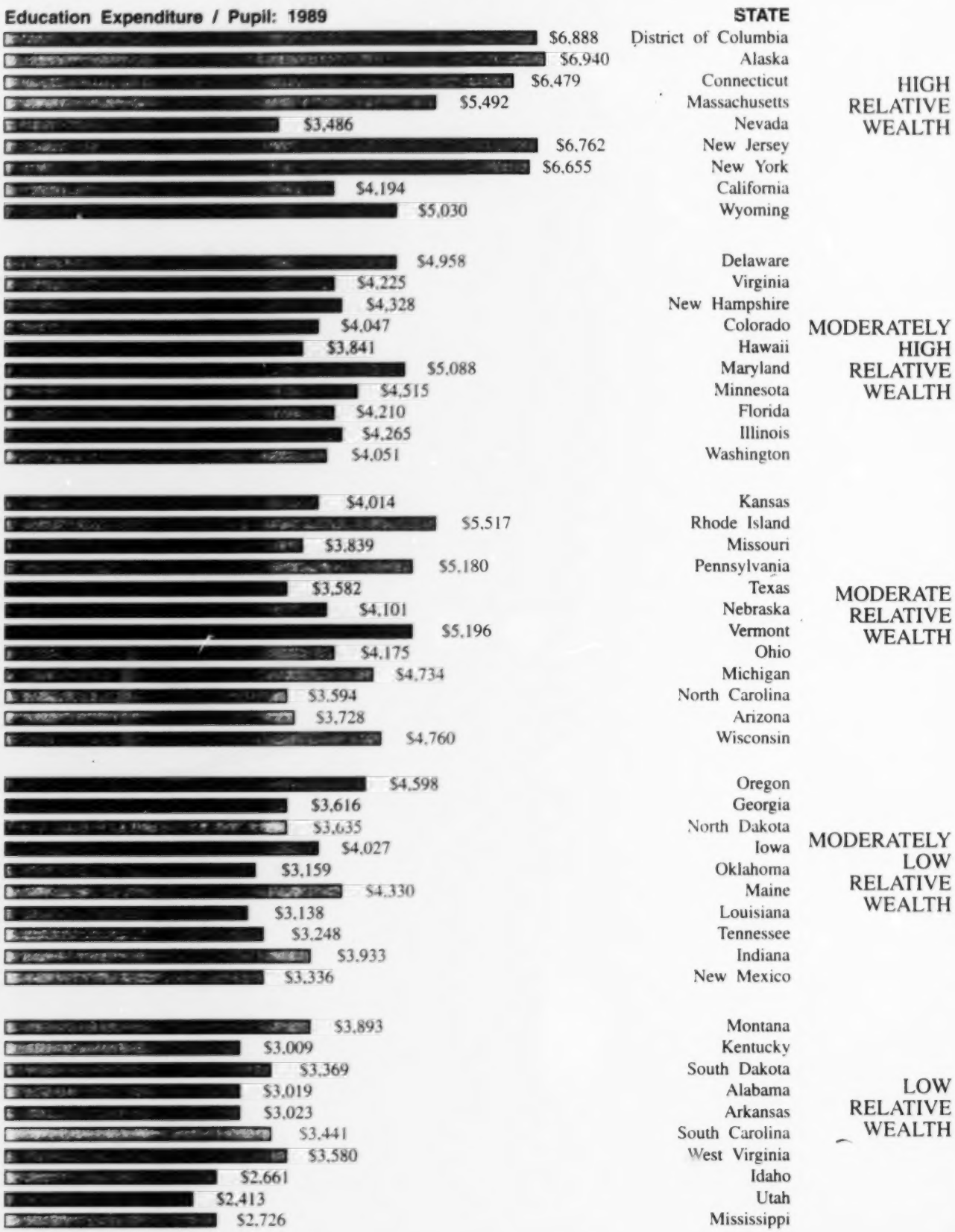

TABLE 12—PUBLIC SCHOOL MEMBERSHIP AND EDUCATION EXPENDITURE PER PUPIL BY URBANICITY: 1989

		Public School Membership As a % of 5–17 Years: 1989	Education Expenditure/Pupil Fiscal 1989
CITY	District of Columbia	89.34%	6,888
	Arizona	90.55%	3,728
	Nevada	97.82%	3,486
	Texas	95.81%	3,582
CITY/URBAN FRINGE	California	91.33%	4,194
	Colorado	93.48%	4,047
	Florida	89.29%	4,210
	Hawaii	85.17%	3,841
	Illinois	84.94%	4,265
	Maryland	87.02%	5,088
	New Jersey	83.67%	6,762
	New York	84.29%	6,655
	Utah	95.93%	2,413
	Washington	94.32%	4,051
CITY/URBAN FRINGE/TOWN	Connecticut	86.76%	6,479
	Massachusetts	89.35%	5,492
	Michigan	89.54%	4,734
	Oregon	93.92%	4,598
	Rhode Island	83.78%	5,517
CITY/TOWN	Indiana	89.59%	3,933
	Louisiana	85.95%	3,138
	New Mexico	92.52%	3,336
	Oklahoma	93.47%	3,159
	Tennessee	89.58%	3,248
CITY/URBAN FRINGE/TOWN/RURAL	Alabama	89.19%	3,019
	Delaware	82.19%	4,958
	Georgia	87.60%	3,616
	Minnesota	92.33%	4,515
	Missouri	86.32%	3,839
	Ohio	86.80%	4,175
	Pennsylvania	81.18%	5,180
	South Carolina	89.30%	3,441
	Virginia	94.84%	4,225
CITY/TOWN/RURAL	Alaska	99.35%	6,940
	Iowa	92.19%	4,027
	Kansas	92.06%	4,014
	Nebraska	88.83%	4,101
	North Carolina	91.67%	3,594
	North Dakota	91.33%	3,635
	Wisconsin	87.08%	4,760
TOWN/RURAL	Arkansas	91.38%	3,023
	Idaho	95.52%	2,661
	Kentucky	88.08%	3,009
	Maine	97.17%	4,330
	Mississippi	88.70%	2,726
	Montana	95.74%	3,893
	New Hampshire	88.05%	4,328
	South Dakota	90.95%	3,369
	Vermont	93.84%	5,196
	West Virginia	92.79%	3,580
	Wyoming	97.17%	5,030

Sources: U. S. Bureau of the Census, Current Population Reports series P-25, No. 1058, "State Population and Households Estimates: July 1, 1989". U.S. Department of Education, NCES, Common Core of Data, Public School Universe, 1989-90, April, 1991. U.S. Department of Education, National Center for Education Statistics, Common Core of Data, " The National Public Education Financial Survey, September, 1990.

24

STATE'S

EDUCATIONAL

POLICIES AND PRACTICES

Some characteristics of the school system are under the control of the policy makers and educators. These are the malleable variables of the education system-things that can be changed for the better. A number of areas are covered here: the time allocated to instruction, content of instruction, characteristics of teacher workforce, policies affecting teaching, and states' policies and programs related to testing.

Instructional Time

Table 13 reflects each state's policies on the length of the school year. It includes policies on exceptions to initial requirements in order to indicate the final stipulations after these exceptions are taken into account. Most states require 175–180 days and most provide some sort of sanction for schools and districts that provide less than the state minimum.

In **Table 14** state policies vary substantially on the length of school day in hours by grade level. Pre-kindergarten, half-day kindergarten and full-day kindergarten stipulations vary considerably. Elementary and secondary stipulations range from four to six hours per day.

Instructional Programs

Many states have extended their policies regarding kindergarten in recent years. Many now stipulate that half-day kindergarten must be offered, others that full-day kindergarten must be offered. Some leave this up to the state or to the locality, but stipulate either half or full-day. In relatively few states is attendance required at the kindergarten level.

Table 16, High School Graduation Requirements in Carnegie Course Units, shows the course units in years required in each subject. These current requirements reflect movements by the states in the mid-eighties towards "A Nation At-Risk" recommendations; however, they still reflect considerable variation among the states in the number of course years required in various subjects.

Chart 2, Competency Testing, indicates whether a competency test is required in order to complete high school. Similar to Table 16, this chart also reflects the considerable variations among the states as to what is required for high school graduation.

School Participation

Table 17, Student Attendance, indicates the age students must enter school, the age to which students must remain in school and exceptions to mandatory entrance and exit ages.

Teacher Preparation and Teacher Characteristics

Table 18 describes each state's teacher preparation requirements. It shows the number of professional education hours and academic major hours required for preparation at the elementary level and the secondary level. These requirements vary considerably among the states. The right hand columns show the kind of induction required for new teachers or non-teachers through alternative routes at the elementary and secondary level. These include extended internships or induction periods, supervised student teaching or a conventional induction program or whether there is no state policy. These columns show a number of states that require extended internships.

Chart 3 shows which states require assessment for entrance into or exit from teacher preparation. A substantial number of states are using some sort of assessment at these critical stages in teacher preparation programs.

Table 19, Teacher Assessment for Certification, describes teacher assessment requirements in conjunction with certification. For each state, the table shows what is assessed—that is—basic skills, professional skills or content knowledge or some sort of in-class observation. It also describes how these areas are assessed among paper/pencil tests, performance assessment or other methods. Finally, table 19 shows why the assessment is made in terms of initial/provisional certification or regular/permanent certification. In other words, it describes what decision about the teacher's career is based on these tests.

Chart 4 shows those states with an alternative route for teacher licensure. These are programs to enable individuals who are not trained traditionally to become teachers.

The figures in Ethnicity and Sex of Elementary and Secondary Teachers, **Table 20,** show great variation in the percentage of elementary school teachers who are non-white, with many states having fewer than ten percent of their teachers from minority groups. At the secondary level, a similar pattern emerges concerning gender. Females seem to constitute the vast majority of elementary school teachers with more than three-quarters of elementary school teachers female in almost every state. At the high school level, the picture is more mixed with some states having more than seventy percent of the teachers drawn from females and some having more than sixty percent drawn from males.

Table 21 shows state efforts to recruit minorities into teaching, including offering financial aid in the form of scholarships, loans, fellowships or other means. Special recruitment efforts include early identification in the community college, collaboration and so on. Twenty-six states have a program for minority recruitment.

State Indicators of Math Instruction

The next three tables delve deeper into the particular areas of mathematics and science education. There are several reasons for including these indicators at this time. First, mathematics and science education is a widely recognized priority for the improvement of American education. Secondly, recent state-by-state results in student achievement have been compiled for the first time. These first figures pertain to mathematics achievement among eighth graders. It is beneficial to look at characteristics of mathematics instruction programs in the states as possible clues for variations in those achievement levels. Thirdly, CCSSO has been able to do a complete, in-depth development effort of indicators in the math/science area, making it possible to present these figures on a state-by-state basis.

Table 22, Reform Efforts in Mathematics, shows those states who have completed substantial reform efforts in mathematics in recent years. This includes revising their curriculum guides.

Table 23, Current Supply of Teachers in High School Mathematics and Physics, shows where problems may exist in the supply of high school mathematics and physics teachers. The table shows the percent of teachers who are working out of field and the percentage of those over age fifty, and thus potential for retirement in the near future. Some states have as many as twenty or thirty percent of their teachers or more in mathematics out of field at the high school level. Twenty to sixty percent of physics teachers may be teaching in that area without corresponding certification. Among the states, close to one-third of the math teachers are over fifty and similar proportions of physics teachers are over fifty in several states. As these teachers reach retirement age, recruitment efforts will be needed in order to replace them.

Table 24, Course Enrollments in Mathematics and Science, shows state-by-state figures for enrollment for key math and science courses. In math: algebra I, algebra II and calculus; and in science: biology, chemistry and physics are key courses. These are felt to be gatekeeper or watershed courses, determining the progress of students towards college preparation programs. The percentage of students completing algebra I in the states varies from a low of about fifty percent to a high of over ninety-five percent. In calculus, as few as two percent of the students in states from which the figures are available may take calculus while in other states, sixteen or seventeen percent may be taking this advanced course. In science, similar ranges exist, with sixty-five to ninety-five plus students taking first year biology, thirty-three to sixty plus taking chemistry and ten to thirty-six percent taking first year physics.

State Initiatives to Restructure Learning

Table 25, Percent of Teachers Involved in Making Selected Decisions, is meant to

present some indication of the professional responsibility of the teachers for the key decisions related to the content and policies affecting their instructional programs. One of these is choosing textbooks, another is shaping the curriculum and a third is setting promotion and retention policies. Generally, more than three quarters of the teachers in a state report being involved in making decisions about textbooks. Fewer, between one-half and three quarters, report being involved in shaping the curriculum. However, less than half in any state report being involved in setting policies for promotion and retention of students.

Table 26 shows teachers' current teaching assignments in terms of average students per class. These range from nineteen to twenty-eight students per class. The table also shows the percentage of teachers reporting very large or very small classes. What is significant here is that over fifty percent of the teachers in California report having typical classes with more than thirty students. Conversely, forty-five percent of the teachers in North Dakota report fewer than nineteen students in a typical class. Most teachers report feeling typical class size is about right, but in some states many feel classes are too large, particularly in California. One-third of the teachers report that their classes are too large, similarly fifty-eight percent report this in Utah. More than three-quarters of the teachers in most states report spending more than forty hours per week on the job and ten or fifteen percent report spending more than sixty hours per week on their jobs. Conversely, fewer than twenty percent in most states report spending less than forty hours per week on the job. About a fifth of teachers across the county report teaching subjects that they are unqualified to teach. This varies from twelve percent to thirty percent among the states.

Table 27 reports teachers by state reporting various problems in schools including disruptive classroom behavior, absenteeism, student apathy and so on. Variations among the states in some of these figures might provide clues for classroom conditions that could be alleviated.

Table 28 reports examples of current state level efforts to restructure learning. These include curriculum revisions, staff development, reforms of teacher preparation, student assessment reforms, policy reforms affecting instruction and other approaches. Considerable variety in the purpose and methods of the programs is reflected as well as their mechanisms for implementation. State Initiatives to Restructure Learning contains state responses to the type and summary questions on the CCSSO survey, State Critical Thinking Initiatives. Information is displayed in two parts: The first section describes state critical thinking initiatives aimed at the general student population (including gifted and talented students), and the second section describes critical thinking initiatives which specifically target special needs students.

TABLE 13—LENGTH OF SCHOOL YEAR

	In Days	In Hours	Permits Exceptions To Time Requirements	In Days After Approved Exemptions(1)	In Hours After Approved Exemptions(1)	Sanctions Possible for Providing Less Than State Minimum(2)
Alabama	175	—	No	—	—	Yes
Alaska	180	—	No	—	—	No
Arizona	175	—	No	—	—	Yes
Arkansas	178	—	No	—	—	Yes
California	180	—	Yes	—	—	Yes
Colorado	—	1,080	Yes	—	1,056	No
Connecticut	180	900	Yes	—	—	Yes
Delaware	180	—	Yes	—	—	No
District of Columbia	180	—	No	—	—	Yes
DoDDS	190	—	Yes	175	—	Yes
Florida	180	—	Yes	Not Specified	—	Yes
Georgia	180	—	No	180	—	Yes
Hawaii	180	—	No	—	—	No
Idaho	180	—	Yes	—	—	Yes
Illinois	180	—	Yes	Not Specified	—	Yes
Indiana	180	1,080 (6)	Yes	Not Specified	—	Yes
Iowa	180	—	Yes	Not Specified	—	Yes
Kansas	180	1080	Yes	175	1,050	Yes
Kentucky	175	—	Yes	(3)	—	Yes
Louisiana	180	—	Yes	175	—	Yes
Maine	175	—	Yes	(4)	—	Yes
Maryland	180	—	Yes	(4)	—	Yes
Massachusetts	180	—	Yes	180	—	Yes
Michigan	180	900	Yes	178	—	Yes
Minnesota	175	—	Yes	175	—	Yes
Mississippi	180	—	No	—	—	Yes
Missouri	174	1,044	Yes	174	1,032	Yes
Montana	180	—	Yes	180	—	Yes
Nebraska	—	1,010 (5)	Yes	—	Not Specified	Yes
Nevada	180	—	Yes	170	—	Yes
New Hampshire	180	—	Yes	(4)	—	No
New Jersey	180	—	Yes (4)	—	—	Yes
New Mexico	180	—	Yes	148	—	No
New York	180	—	Yes	175	—	Yes
North Carolina	180	—	Yes	177 (8)	—	Yes
North Dakota	180	—	Yes	173	—	Yes
Ohio	182	—	Yes	178	—	No
Oklahoma	175	—	No	—	—	Yes
Oregon	—	990 (4)	No	—	950 (9)	Yes
Pennsylvania	180	—	No	—	—	Yes
Puerto Rico	183	—	No	—	—	No
Rhode Island	180	—	Yes	170	—	Yes
South Carolina	180	—	Yes	180	—	Yes
South Dakota	175	—	Yes	175	—	Yes
Tennessee	180	—	No	—	—	Yes
Texas	175	—	Yes	(4)	—	Yes
Utah	180	—	Yes	(4)	—	Yes
Vermont	175	—	Yes	(4)	—	Yes
Virgin Islands	180	—	Yes	175	—	No
Virginia	180	990	Yes	175	—	Yes
Washington	180	—	Yes	(4)	—	Yes
West Virginia	180	—	Yes	178	—	Yes
Wisconsin	180	—	Yes	175	—	Yes
Wyoming	175	—	Yes	—	1,050 (7)	Yes

Notes: "—" indicates no state policy.
(1) Exemptions typically granted on a case-by-case basis.
(2) Sanctions may include the loss of state financial aid or the loss of accreditation.
(3) Districts must make up 20 missed days before asking for exceptions.
(4) Written request submitted to Chief State Officer required for exceptions.
(5) Elementary schools must meet 1,032 hours and secondary schools must meet 1,010 hours.
(6) Grades 1–6 require 900 hours.
(7) Elementary grades grades require 875 hours.
(8) Additional exemptions granted on case-by-case basis, high school must meet 900 hours, grades 1–3 require 870 hours, and kindergarten requires 450 hours.
(9) Each level may be reduced by 40 hours for staff development, transportation or emergency school closures.
Source: Council of Chief State School Officers' 1990 Policies and Practices Survey.

28

TABLE 14—LENGTH OF SCHOOL DAY IN HOURS BY GRADE LEVELS

	Pre-Kindergarten	Half-Day Kindergarten	Full-Day Kindergarten	Grades 1–3	Grades 4–6	Grades 7–8	Grade 9	Grades 10–12
Alabama	—	—	6.0	6.0	6.0	6.0	6.0	6.0
Alaska	—	—	—	4.0	5.0	5.0	5.0	5.0
Arizona	1.2	2.0	4.0	4.0	5.0	6.0	3.0 (1)	3.0 (1)
Arkansas	—	3.0	5.5	5.5	5.5	5.5	5.5	5.5
California	—	3.0	—	4.7	5.0	5.0	6.0	6.0
Colorado	—	—	—	—	—	—	—	—
Connecticut	2.5	2.5	—	4.0	4.0	4.0	4.0	4.0
Delaware	—	2.5	—	6.0	6.0	6.0	6.0	6.0
District of Columbia	6.0	—	6.0	6.0	6.0	6.0	6.0	6.0
DoDDS	2.5	2.5	—	5.0	5.5	5.5	6.0	6.0
Florida	—	—	3.0	4.0	5.0	5.0	5.0 (2)	5.0 (2)
Georgia	—	—	4.5	4.5	6.0	6.0	6.0	6.0
Hawaii	—	—	6.0	6.0	6.0	6.0	6.0	6.0
Idaho	—	2.5	4.0 (3)	4.5	5.0	5.5	5.5	5.5
Illinois	—	2.0	4.0	4.0-5.0 (4)	5.0	5.0	5.0	5.0
Indiana	—	2.5	5.0	5.0	5.0	6.0	6.0	6.0
Iowa	—	—	—	5.5	5.5	5.5	5.5	5.5
Kansas	—	2.5	—	6.0	6.0	6.0	6.0	6.0
Kentucky	—	3.0	6.0	6.0	6.0	6.0	6.0	6.0
Louisiana	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Maine	2.5	2.5	5.0	5.0	5.0	5.0	5.0	5.0
Maryland	2.5	2.5	—	6.0	6.0	6.0	6.5	6.5
Massachusetts	—	2.5	5.0	5.0	5.0	5.0	5.5	5.5
Michigan	—	—	—	—	—	—	5.0 (5)	5.0 (5)
Minnesota	—	2.5	5.0	5.0	5.5	6.0	6.0	6.0
Mississippi	—	—	5.5	5.5	5.5	—	—	—
Missouri	—	3.0	3.0-7.0	3.0-7.0	3.0-7.0	3.0-7.0	3.0-7.0	3.0-7.0
Montana	—	2.0 (6)	4.0 (7)	4.0	6.0	6.0	6.0	6.0
Nebraska	—	—	—	—	—	—	—	—
Nevada	—	2.0	—	4.0	5.0	5.5	5.5	5.5
New Hampshire	—	—	—	5.3	5.5	5.5	5.5	5.5
New Jersey	—	2.5	2.5	4.0	4.0	4.0	4.0	4.0
New Mexico	—	2.5	—	5.5	5.5	6.0	6.0	6.0
New York	2.5	2.5	5.0	5.0	5.0	5.5	5.5	5.5
North Carolina	—	—	5.5	5.5	5.5	5.5	5.5	5.5
North Dakota	—	2.5	5.5	5.5	5.5	5.5	6.0	6.0
Ohio	—	2.5	5.0	5.0	5.0	5.5	5.5	5.5
Oklahoma	—	3.0	—	6.0	6.0	6.0	6.0	6.0
Oregon	—	—	—	—	—	—	—	—
Pennsylvania	—	2.5	5.0	5.0	5.0	5.5	5.5	5.5
Puerto Rico	—	3.0	3.0	7.5	7.5	7.5	7.5	7.5
Rhode Island	—	2.5	—	5.0	5.0	5.5	5.5	5.5
South Carolina	2.5	2.5	—	6.0 (8)	6.0 (8)	6.0	6.0 (9)	6.0 (9)
South Dakota	—	2.5	5.0	5.0	5.5	5.5	5.5	5.5
Tennessee	—	4.0	—	6.5	6.5	6.5	6.5	6.5
Texas	3.0	3.0	6.3	6.3	7.0	7.0	7.0	7.0
Utah	—	2.5	—	4.5-5.5 (10)	5.5	5.5	5.5	5.5
Vermont	—	2.0	—	4.0 (11)	—	5.5 (12)	—	5.5 (13)
Virgin Islands	—	—	6.0	6.0	6.0	6.5	6.5	6.5
Virginia	—	3.0	3.0	5.5	5.5	5.5	5.5	5.5
Washington	—	2.5	—	(14)	(14)	(14)	(14)	(14)
West Virginia	—	2.6	5.3	5.3	5.5 (15)	5.5	5.8	5.8
Wisconsin	—	2.5	5.0	6.0	6.0	6.5	6.5	6.5
Wyoming	—	2.5	5.0	5.0	5.0	6.0	6.0	6.0

Notes: "—" indicates no state policy.
1. There is a minimum requirement for full time students.
2. Increased to 5.8 hours under optional funding program (7-50 or 6-60 minute periods).
3. Authorized with State Approval.
4. Grade 1 policy is 4.0 hours. Grades 2 and 3 are 5.0 hours.
5. There is a $30 per pupil incentive to high schools that have at least 6 period days of at least 300 minutes.
6. Two hours for 180 days.
7. May go 4 hours for 90 days.
8. Including lunch.
9. Excluding lunch.
10. Grade 1 policy is 4.5 hours. Grades 2 and 3 are 5.5 hours.
11. Includes grades 1 and 2.
12. Includes grades 3 through 8.
13. Includes grades 9 through 12.
14. Data reported in hours per year. Hours vary by grade. Grades 1–3 = 2,700 hours; grades 4–6 = 2,970 hours, grades 7–8 = 1,980 hours; grades 9–12 = 4,320 hours.
15. Grade 4 requires 5.25 hours and grades 5–6 require 5.5 hours per day.

Source: Council of Chief State School Officers' 1990 Policies and Practices Survey.

29

TABLE 15—KINDERGARTEN POLICIES

	Must Offer Half-Day Kindergarten	Must Offer Full-Day Kindergarten	Must Offer Half- or Full-Day Kindergarten	Student Attendance Required	Other
Alabama	No	Yes	No	No	
Alaska	No	No	No	No	(1)
Arizona	Optional	Optional	No	No	(2)
Arkansas	Yes	No	No	No	
California	Yes	No	No	No	(1)
Colorado	Yes	No	No	No	
Connecticut	No	No	Yes	No	
Delaware	Yes	No	No	No	
District of Columbia	Yes	No	No	Yes	
DoDDS	Yes	No	No	Yes	
Florida	No	Yes	No	Yes	
Georgia	No	Yes	No	No	
Hawaii	No	No	No	No	(1)
Idaho	No	No	No	No	
Illinois	No	No	Yes	No	
Indiana	No	No	Yes	No	
Iowa	No	No	No	No	(1)
Kansas	No	No	No	No	(1)
Kentucky	Yes	No	No	(3)	
Louisiana	Yes	Optional	No	No	
Maine	Yes	No	No	No	
Maryland	Yes	No	No	No	
Massachusetts	No	No	No	No	
Michigan	Yes	Optional	No	No	
Minnesota	Yes (4)	No	No	No	
Mississippi	No	Yes	No	No	
Missouri	Yes	No	No	No	(5)
Montana	No	No	No	No	(5)
Nebraska	No (1)	No	No	No	
Nevada	No	No	No	No	(1)
New Hampshire	No	No	No	No	
New Jersey	Yes (2)	No	No	Yes (5)	(6)
New Mexico	Yes	No	Yes	No	
New York	Optional	Optional	No	No	
North Carolina	No	Yes	No	No	
North Dakota	Yes	No	No	Yes	
Ohio	Yes	No	No	No	
Oklahoma	Yes	No	No	No	
Oregon	No	No	Yes	No	
Pennsylvania	No	No	No	No	(1)
Puerto Rico	Yes	No	No	No	
Rhode Island	Yes	No	No	Yes	
South Carolina	Yes	No	No	No	
South Dakota	Yes	No	No	No	
Tennessee	No	No	Yes	No	
Texas	No	No	No	No	(1)
Utah	Yes	No	No	No	
Vermont	Yes	No	Yes	No	
Virgin Islands	No	No	Yes	No	
Virginia	No	No	Yes	No	
Washington	No	No	Yes	No	
West Virginia	No	No	Yes	Yes	
Wisconsin	No	No	Yes	No	
Wyoming	No	No	No	No	(1)

Notes: (1) Not required by State, but all LEAs offer Kindergarten.
(2) LEA's are reimbursed for half-day programs, but are not required to offer kindergarten programs.
(3) Students must attend kindergarten or pass a readiness test administered by local school systems.
(4) Must offer one half-day of kindergarten or the equivalent, i.e. all day alternate days.
(5) Pursuant to law, a full day for kindergarten in New Jersey schools must be one continuous session of 2.5 hours, but state foundation for a child attending such a program is weighted at .5.
(6) Either half-day kindergarten or 450 hours a year are required.
Source: Council of Chief State School Officers' 1990 Policies and Practices Survey.

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TABLE 16—HIGH SCHOOL GRADUATION REQUIREMENTS IN CARNEGIE COURSE UNITS

	English	Social Sciences	Math	Science	Art/ Music	Foreign Language	Vocational	Other	Electives
Alabama	4	3	2	2	—	—	—	1.5	9.5
Academic/College Bound	4	4	3	3	—	2	—	1.5	4
Alaska	4	3	2	2	—	—	—	1	9
Arizona	4	2	2	2	—	—	—	0.5	9.5
Arkansas	4 (1)	3 (2)	3 (3)	3 (3)	0.5	—	—	1	6.5
California	3	3	2	2	1 (4)	—	—	2	—
Academic/College Bound	4	1	3	1	2	2	—	—	4
Colorado	—	—	—	—	—	—	—	—	—
Connecticut	4	3	3	2	(5)	—	(5)	1	6
Delaware	4	3	2	2	—	—	—	1.5	6.5
District of Columbia	4	2	2	2	—	1	—	2.5	7
Vocational/Career Bound	4	2	2	2	—	—	9	1.5	—
DODDS	4	3	2	2	1	—	1	2	5
Florida	4	3	3	3	0.5	—	0.5	0.5	9
Georgia	4	3	2	2	—	—	—	2	8
Academic/College Bound	4	3	3	3	—	2	—	1	4
Vocational/Career Bound	4	3	2	2	—	—	4	1	4
Hawaii	4	4	2	2	—	—	—	4.5	6
Academic/College Bound	4	4	2	2	—	2	—	4.5	6
Vocational/Career Bound	4	4	2	2	—	—	2	4.5	6
Idaho	4	2.5	2	2	0.5	(6)	—	4.5	6
Illinois	3	2	2	1	—	—	—	0.5	1
Indiana	4	2	2	2	—	—	—	8	1
Iowa	—	—	—	—	—	—	—	—	—
Kansas	4	3	2	2	—	—	—	1	9
Kentucky	4	2	3	2	—	(7)	(7)	2.5	7.5
Academic/College Bound	4	2	3	2	—	—	—	1	8
Louisiana	4	3	3	3	—	—	—	2.5	7.5
Maine	4	2	2	2	1	—	—	1.5	3.5
Maryland	4	3	3	2	1	—	1	1 (8)	5
Massachusetts	—	—	—	—	—	—	—	—	—
Michigan	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)	(9)
Minnesota	4	3	1	1	—	—	—	1.6	9.3
Mississippi	4	2	2	2	—	—	—	—	—
Academic/College Bound	4	2.5	3	3	—	—	—	—	—
Missouri	3	2	2	2	1	—	—	2	10
Montana	4	1.5	2	1	—	—	—	1	10.5
Nebraska	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	9
Nevada	4	2	2	2	—	—	—	(11)	8.5 (12)
New Hampshire	4	2.5	2	2	0.5	—	—	1.7	7
New Jersey	4	3	3	2	1	—	—	4.5	4.5
New Mexico	4	3	3	2	—	—	—	2	9
New York	4	3	2	2	—	—	—	5 (13)	—
North Carolina	4	2	2	2	—	—	—	1	9
North Dakota	4	3	2	2	—	—	—	5	1
Ohio	3	2	2	1	—	—	—	1	9 (14)
Oklahoma	4	2	2	2	—	—	—	—	10
Oregon	3 (15)	3.5	2	2	—	1 (16)	—	2.5	8
Pennsylvania	4	3	3	3	—	—	—	3	5
Puerto Rico	3	2.5	3	2	—	—	—	4	—
Rhode Island	4	2	2	2	—	—	—	—	6
Academic/College Bound	4	2	3	2	0.5	2	—	4	4
South Carolina	4	3	3	2	—	—	—	1	7
South Dakota	4	3	2	2	—	—	—	1	8
Tennessee	4	1.5	2	2	—	—	—	1.5	9
Academic/College Bound	4	2	3	2	1	2	—	—	6
Texas	4	2.5	3	2	—	—	—	2	7
Academic/College Bound	4	2.5	3	3	1	2	—	2	3
Utah	3	3	2	2	1.5	—	1	2	9.5
Vermont	4	3	(17)	(17)	1	—	—	1.5	—
Virgin Islands	4	2	2	2	—	1	1	2	6
Virginia	4	3	(17)	(17)	1 (18)	—	1 (18)	2	6
Academic/College Bound	4	3	3	3	1	3	1	2	4
Washington	3	2.5	2	2	—	—	1	3	5.5
West Virginia	4 (19)	3	2	2	(20)	(20)	(20)	2 (21)	7
Wisconsin	4	3	2	2	—	—	—	2	—
Wyoming	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)

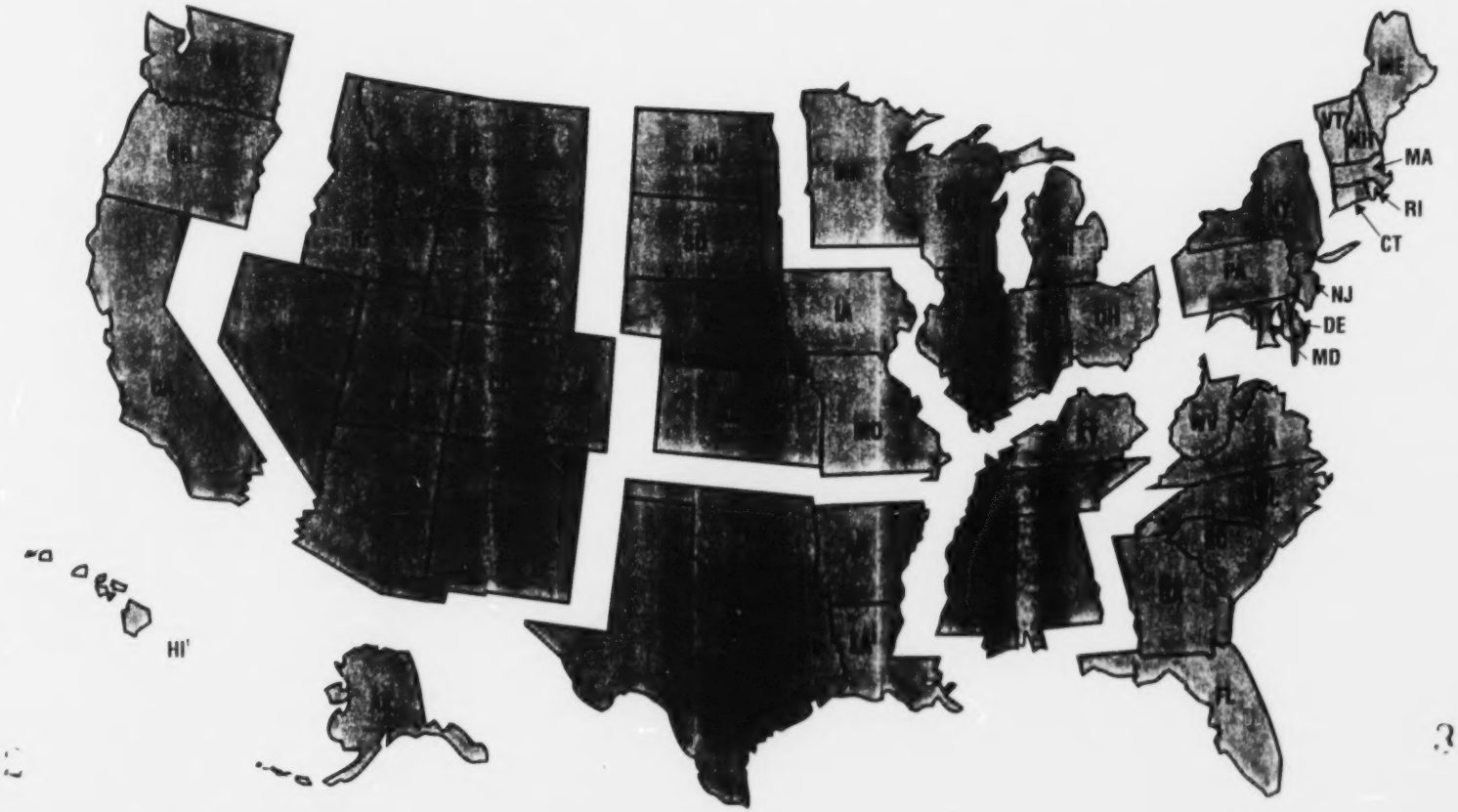
Source: Council of Chief States School Officers' 1990 Policies and Practices Survey.
Note: "—" indicates no state policy regarding Carnegie course units.

1. Oral communication may be substituted at 11th or 12th grade.
2. One unit of practical arts may be substituted.
3. Five units of math and science are required: 2 units in one area and 3 in another. At least 1 unit in life sciences and 1 unit in physical sciences.
4. May take course in either art/music or foreign language.
5. One unit in either the arts or vocational education.
6. School must offer these programs. There are no course requirements.
7. One additional course unit in foreign language or vocational arts.
8. Physical education.
9. No state requirements, but financial incentives are provided for districts requiring the recommended levels of graduation credit requirements.
10. Local districts establish specific graduation requirements. Each district must require 200 hours for graduation of which 80% must be from the core curriculum. All courses listed here make up the core curriculum.
11. One unit credit required in humanities, 1 in American government, 2 credits in physical education.
12. Pupils who demonstrate competency in the use of computers are not required to take the course of study in computers and therefore must earn only 13.5 units in the required courses.
13. A 3-unit sequence in any major subject, except English and social studies, is required; one half unit of health is also required. One half unit of physical education each year is not counted in the 16 unit total.
14. Of the 8 electives, 1 must be chosen from applied arts, fine or performing arts, or a foreign language.
15. Includes the equivalent of one unit in written composition.
16. One unit shall be earned in any one or combination of applied arts, fine arts or foreign language.
17. A third unit of math or science is required for a total of 5 units in math or science.
18. One unit of credit required from fine arts or practical arts.
19. Four units of English/language arts or 3 and one-half units of English/language arts and one-half unit of speech.
20. A student must earn 3 units in at least one content area besides English.
21. One unit health and physical education.
22. No state requirements, districts set their own.

CHART 2 - COMPETENCY TESTING

- District of Columbia
- Virgin Islands
- DoDS

- Competency Test Not Required
- Competency Test Required



[1] Except for Certificate of Course Completion.
[2] The Graduation Test is composed of Mathematics, English/Language Arts, Writing, Social Studies and Science.
Source: Council Of Chief State School Officers' 1990 Policies and Practices Survey.

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TABLE 17—STUDENT ATTENDANCE REQUIREMENTS 1989–90 SCHOOL YEAR

	Age Students Must Enter School	Age Students Generally Enter School	Age to Which Students Must Remain In School	Exceptions to State Policies		
				Mandatory Attendance Age	Mandatory Exit Age	Mandatory Entrance Age
Alabama	7	5	16	No	No	Yes
Alaska	7	5	16	No	No	Yes
Arizona	8	5	16	Yes	Yes	Yes
Arkansas	5	5	17	Yes	No	Yes
California	6	5	18	Yes	No	Yes
Colorado	7	5	16	No	No	Yes
Connecticut	7	5	16	No	No	No
Delaware	5	5	16	Yes	No	Yes
District of Columbia	7	5	16	No	Yes	No
DoDDS	5	5	18	Yes	No	No
Florida	6	5	16	Yes	No	Yes
Georgia	7	5	16	Yes	Yes	Yes
Hawaii	6	5	18	Yes	Yes	Yes
Idaho	7	5	16	No	No	Yes
Illinois	7	5	16	No	No	Yes
Indiana	7	5	16	Yes	Yes	Yes
Iowa	7	5	16	No	Yes	Yes
Kansas	7	5	16	Yes	No	Yes
Kentucky	6	5	16	No	Yes	No
Louisiana	7	5	17	No	Yes	Yes
Maine	7	5	17	Yes	Yes	Yes
Maryland	6	5	16	Yes	Yes	Yes
Massachusetts	6	6	16	Yes	No	Yes
Michigan	6	5	16	No	No	No
Minnesota	7	5	16	Yes	Yes (2)	Yes
Mississippi	6	5	16	No	No	Yes
Missouri	7	5	16	Yes	No	No
Montana	7	6	16 (1)	No	No	Yes
Nebraska	7	5	16	No	No	Yes
Nevada	7	5	17	Yes	Yes	Yes
New Hampshire	6	6	16	Yes	Yes	Yes
New Jersey	6	5	16	No	No	Yes
New Mexico	5	5	18	Yes	Yes	No
New York	6	5	16	Yes	Yes	Yes
North Carolina	7	5	16	No	No	No
North Dakota	7	5	16	Yes	No	No
Ohio	6	5	18	Yes	Yes	Yes
Oklahoma	6	6	18	Yes	No	Yes
Oregon	7	5	18	Yes	Yes	Yes
Pennsylvania	8	5	17	No	Yes	Yes
Puerto Rico	6	6	18	No	No	Yes
Rhode Island	6	5	16	No	No	No
South Carolina	5	5	16	Yes	Yes	Yes
South Dakota	6	5	16	Yes	No	Yes
Tennessee	5 (3)	5	17	Yes	Yes	Yes
Texas	7	7	17	No	No	No
Utah	6	5	18	Yes	Yes	Yes
Vermont	7	6	16	No	No	No
Virgin Islands	4.5	5	16	No	No	Yes
Virginia	6	5	18	No	No	No
Washington	8	5	18	Yes	Yes	Yes
West Virginia	6 (4)	5	16	Yes	Yes	Yes
Wisconsin	6	5	18	No	No	No
Wyoming	6	5	16	No	No	Yes

Notes: (1) Either reaching the age of 16 or completion of the 8th grade, whichever is later.
(2) For regularly funded education.
(3) Kindergarten—entrance age/attendance not mandated.
(4) Must have completed state approved kindergarten to enter grade one.
Source: Council of Chief State School Officers' 1990 Policies and Practices Questionnaire.

TABLE 18—TEACHER PREPARATION

	Professional Education Hours		Academic Major Hours		New Teacher Induction 1989 Graduates		Non-Teacher Induction Alternative Routes	
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary
Alabama	45	33	27–54 (1)	54	ST	ST	ST	ST
Alaska	(2)	(2)	(2)	(2)	EI,ST	EI,ST	—	—
Arizona	45	30	18	30	EI,ST	EI,ST	—	EI
Arkansas	18	18	21–36	21–36	ST	—	EI	EI
California	30	30	84 (3)	45	ST	ST	EI,ST	EI,ST
Colorado	24–42	18–42	35–60	35–60	—	ST	—	—
Connecticut	30	18	—	—	EI,ST	EI,ST	—	EI
Delaware	33	15–18	12	30–45	ST	ST	EI,ST	EI,ST
District of Columbia	15	15	30	30	—	—	—	—
DoDDS	18	18	18	24	—	—	—	—
Florida	20	20	21	30	EI	EI	—	EI
Georgia	24	24	27–45	27–45	EI	EI,ST	EI	EI
Hawaii	53	26–32	18	30- 46	ST	ST	—	—
Idaho	24	20	(9)	20–45	ST	ST	—	—
Illinois	16	16	—	32	ST	ST	—	—
Indiana	30	24	30	36	ST	EI,ST	—	—
Iowa	(4)	(4)	(4)	30	ST	ST	—	—
Kansas	(7)	(7)	(7)	(7)	ST	ST	—	—
Kentucky	39	25	21	30	EI,ST	EI,ST	EI,ST	EI,ST
Louisiana	30	27	—	20–60	EI,ST	EI,ST	EI,ST	EI,ST
Maine	24	24	36	36	EI,ST	EI,ST	—	—
Maryland	26	18	—	24–36	ST	ST	ST	ST
Massachusetts	21	21	36	36	EI	EI	EI,ST	EI,ST
Michigan	20	20	20-30	20-30	EI,ST	EI,ST	—	—
Minnesota	45	18	—	26–48	ST	ST	—	—
Mississippi	27	24	36	36	ST	ST	EI	EI
Missouri	60	24	21	30–40	ST	EI,ST	—	—
Montana	(2)	(2)	(2)	30	ST	ST	—	—
Nebraska	40	25 and up	40	Varies	—	—	ST	ST
Nevada	30	22	—	30–36	ST	ST	—	—
New Hampshire	(5)	(5)	—	—	EI,ST	EI,ST	EI	—
New Jersey	30	30	30	30	ST	ST	EI,ST	EI,ST
New Mexico	30–36	24–30	24–36	24–36	—	—	—	—
New York	24	12	—	24–36	—	—	—	—
North Carolina	(5)	(5)	(5)	(5)	EI,ST	EI,ST	EI,ST	EI,ST
North Dakota	50	50	30	36	ST	ST	—	—
Ohio	30	24	50 (6)	30	EI,ST	EI,ST	—	EI (10)
Oklahoma	30	30	40	40	EI,ST	EI,ST	EI	EI
Oregon	24	24	40	14–40	ST	ST	—	—
Pennsylvania	50	30-36	30–33	30–33	EI,ST	EI,ST	EI,ST	EI,ST
Puerto Rico	90	102	—	30	—	—	—	EI,ST
Rhode Island	24	18	(4)	30–36	ST	ST	—	—
South Carolina	(7)	(7)	(7)	(7)	ST	ST	—	—
South Dakota	26	21	32	30–42	ST	ST	—	—
Tennessee	(2)	(2)	(2)	(2)	EI,ST	EI,ST	—	EI
Texas	18	18	36	48	ST	ST	EI	—
Utah	(2)	(2)	(2)	45	ST	ST	—	—
Vermont	—	—	30	30	—	—	—	—
Virgin Islands	24	24	24	24	ST	ST	—	—
Virginia	18	18	60	(8)	ST	ST	ST	ST
Washington	(2)	(2)	(2)	(2)	ST	ST	—	—
West Virginia	(4)	(4)	(4)	(4)	EI,ST	EI	—	—
Wisconsin	26	18	22	34	ST	ST	—	—
Wyoming	24	24	—	15–48	ST	ST	—	—

Notes: "EI"—Extended Internship or Induction Period. "ST"—Supervised Student Teaching. "—" indicates no state policy.
(1) Depends on major. Most students complete two 27-hour majors unless they choose a comprehensive major such as general science.
(2) Completion of an approved program and recommendation of the preparing agency or certifying state agency.
(3) May include general education requirements as part of a major.
(4) Hours are not specified.
(5) Must meet state competency requirements.
(6) Must complete a minimum of twenty semester hours of coursework selected from the humanities, math, natural or social sciences in addition to 30 semester hours across subjects taught in elementary schools.
(7) Program approval process is used.
(8) Hourly requirments vary according to the endorsement being sought.
(9) Coursework required in Language Arts, Social Studies, Science, and Fine Arts.
(10) Vocational education program only.
Source: Council of Chief State School Officers' 1989 Policies and Practices Survey.

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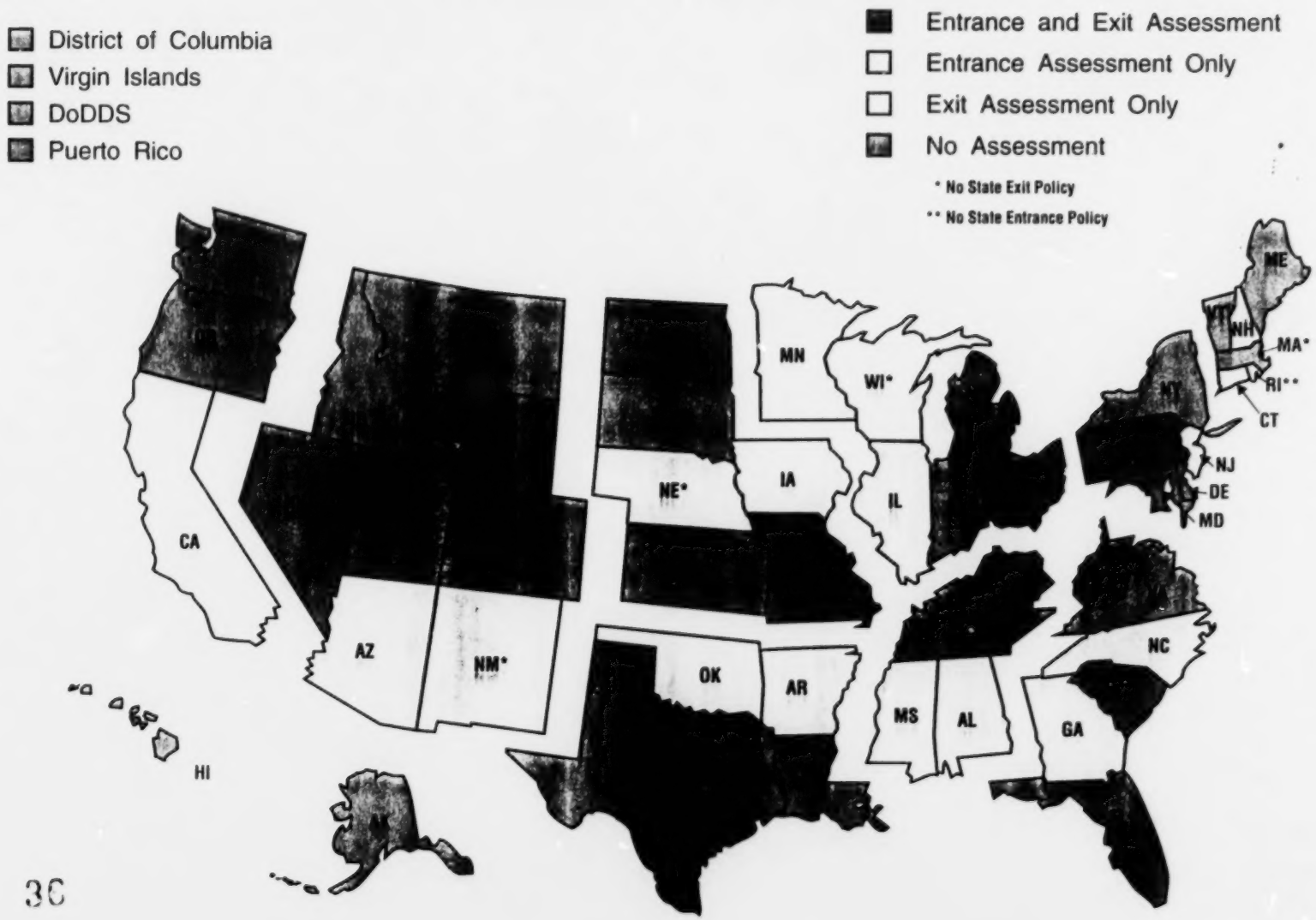
CHART 3 - TEACHER ASSESSMENT FOR PREPARATION



' Vermont - Universities set own evaluation standards.

Source: Council of Chief State School Officers 1990 Policies and Practices Survey

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TABLE 19—TEACHER ASSESSMENT FOR CERTIFICATION

	Statewide Assessment for Certification		
	WHAT ASSESSED	**HOW ASSESSED**	**WHY ASSESSED**
ALABAMA	—	—	—
ALASKA	—	—	—
ARIZONA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
ARKANSAS	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
CALIFORNIA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	Basic Skills (1)	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge (2)	Pencil/Paper	Regular/Permanent Certification
COLORADO	Basic Skills (3)	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
CONNECTICUT	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
DELAWARE	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
DISTRICT OF COLUMBIA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
DoDDS	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
FLORIDA	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
	In-Class Observation	Performance Assessment (4)	Regular/Permanent Certification
	(4)	(4)	Recertification or Maintenance of Certificate
GEORGIA	Content Knowledge (5)	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation (5)	Performance Assessment	Regular/Permanent Certification
	Content Knowledge (6)	Pencil/Paper	Recertification or Maintenance of Certificate
HAWAII	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
IDAHO	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
ILLINOIS	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
INDIANA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
IOWA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
	Basic Skills	Pencil/Paper	Recertification/Maintenance of Certificate
	Professional Skills	Pencil/Paper	Recertification/Maintenance of Certificate
	Content Knowledge	Pencil/Paper	Recertification/Maintenance of Certificate
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
KANSAS	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
KENTUCKY	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
LOUISIANA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
MAINE	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
MARYLAND	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
MASSACHUSETTS	(7)	(7)	Initial/Provisional Certification
	(7)	(7)	Recertification/Maintenance of Certification
MICHIGAN	—	—	—

TABLE 19—TEACHER ASSESSMENT FOR CERTIFICATION (CONTINUED)

	Statewide Assessment for Certification		
	WHAT ASSESSED	HOW ASSESSED	WHY ASSESSED
MINNESOTA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
MISSISSIPPI	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
MISSOURI	Content Knowledge (8)	Pencil/Paper	Initial/Provisional Certification
MONTANA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	(9)	(9)	Recertification/Maintenance Certification
NEBRASKA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
NEVADA	Basic Skills	Pencil/Paper	Initial/Provisional Certification (10)
	Professional Skills	Pencil/Paper	Initial/Provisional Certification (10)
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification (10)
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
NEW HAMPSHIRE	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
NEW JERSEY	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
NEW MEXICO	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
	Basic Skills	Pencil/Paper	Recertification/Maintenance of Certificate
	Professional Skills	Pencil/Paper	Recertification/Maintenance of Certificate
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
NEW YORK	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Basic Skills	Pencil/Paper	Recertification/Maintenance of Certificate
	Professional Skills	Pencil/Paper	Recertification/Maintenance of Certificate
NORTH CAROLINA	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
NORTH DAKOTA	—	—	—
OHIO	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
OKLAHOMA	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
OREGON	Basic Skills (11)	Pencil/Paper	Initial/Provisional Certification
	Professional Skills (12)	Performance Assessment	Initial/Provisional Certification
	Content Knowledge (13)	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
PENNSYLVANIA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
PUERTO RICO	No State Policy		Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
RHODE ISLAND	No State Policy		Recertification/Maintenance of Certificate
	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Initial/Provisional Certification
SOUTH CAROLINA	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
SOUTH DAKOTA	—	—	—
TENNESSEE	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
TEXAS	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	No State Policy		Regular/Permanent Certification
	No State Policy		Recertification/Maintenance of Certificate
UTAH	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
VERMONT	—	—	—
VIRGIN ISLANDS	—	—	—

TABLE 19—TEACHER ASSESSMENT FOR CERTIFICATION (CONTINUED)

	Statewide Assessment for Certification		
	WHAT ASSESSED	HOW ASSESSED	WHY ASSESSED
VIRGINIA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Professional Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Professional Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
	In-Class Observation	Performance Assessment	Recertification/Maintenance of Certificate
WASHINGTON	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Regular/Permanent Certification
WEST VIRGINIA	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Content Knowledge	Pencil/Paper	Initial/Provisional Certification
	In-Class Observation	Performance Assessment	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Content Knowledge	Pencil/Paper	Regular/Permanent Certification
	In-Class Observatio	Performance Assessment	Regular/Permanent Certification
	(14)	(14)	Recertification/Maintenance Certificate
WISCONSIN	Basic Skills	Pencil/Paper	Initial/Provisional Certification
	Basic Skills	Pencil/Paper	Regular/Permanent Certification
	Basic Skills	Pencil/Paper	Recertification/Maintenance of Certificate
WYOMING	—	—	—

Key: "—" indicates no state policy.
Notes: (1) Content Knowledge Test or Waiver.
(2) Content Knowledge Test or Waiver plus fifth year.
(3) Must pass Basic Skills Test before formal admission to teacher education.
(4) Applicant may take subject area test rather than college course.
(5) A non-renewable Professional Certificate may be issued, during which time test must be passed.
(6) Content Knowledge Test must be passed to renew certificates. Once passed, the test need not be taken again.
(7) Test required for foreign language, bilingual and English as a Second Language.
(8) An exit assessment is required prior to state certification.
(9) If a certificate expires, teachers are required to take the NTE.
(10) Initial licensing is regular licensing.
(11) Passing score on C-BEST required for initial certification.
(12) Acceptable NTE Specialty Area test may substitute for 24 semester hours of coursework.
(13) Acceptable NTE Specialty Area Test may substitute for special area endorsement.
(14) Six semester hours and three years of successful teaching experience.
Source: Council of Chief State School Officers, 1989 Policy and Practices Survey.

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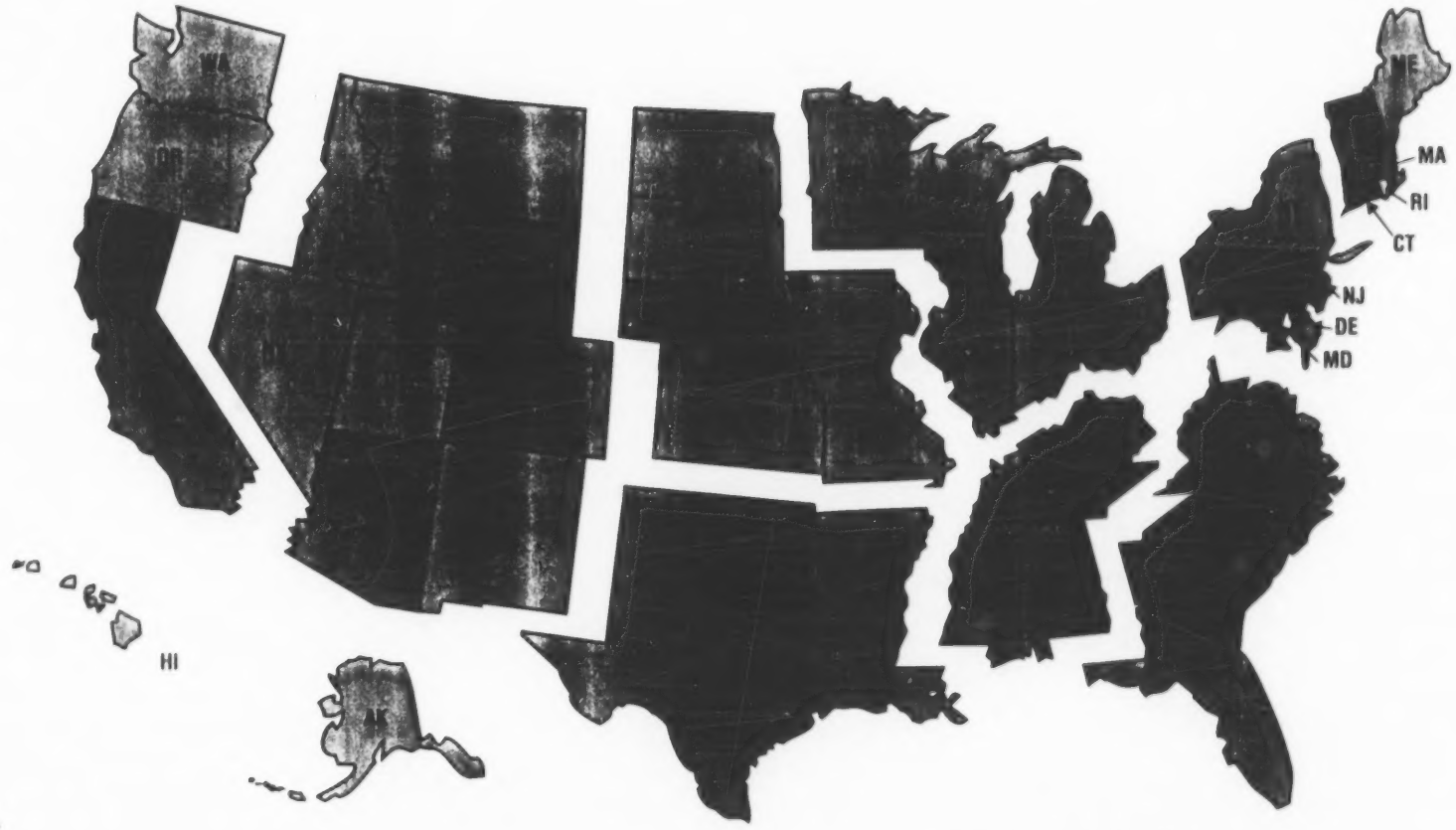
CHART 4 - ALTERNATIVE ROUTES FOR TEACHER LICENSURE

- District of Columbia
- Virgin Islands
- DoDDS
- Puerto Rico

- No Alternative Routes
- Alternative Routes



Source: Council Of Chief State School Officers' 1989 Policies and Practices Survey.

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TABLE 20—ETHNICITY AND SEX OF ELEMENTARY AND SECONDARY TEACHERS

	Race/Ethnicity				Sex			
	Non-White Grades K–6	White Grades K–6	Non-White Grades 7–12	White Grades 7–12	Male Grades K–6	Female Grades K–6	Male Grades 7–12	Female Grades 7–12
Alabama	23.7%	76.3%	27.8%	72.2%	8.9%	91.1%	37.4%	62.6%
Alaska	9.8%	90.2%	4.0%	96.0%	24.3%	75.7%	45.2%	54.8%
Arizona	12.6%	87.4%	14.3%	85.7%	18.3%	81.7%	52.6%	47.4%
Arkansas	11.2%	88.8%	16.8%	83.2%	7.8%	92.2%	27.0%	73.0%
California	17.7%	82.3%	14.0%	86.0%	15.4%	84.6%	55.1%	44.9%
Colorado	13.6%	86.4%	7.7%	92.3%	12.6%	87.4%	51.7%	48.3%
Connecticut	5.5%	94.5%	2.7%	97.3%	12.3%	87.7%	52.4%	47.6%
Delaware	13.8%	86.2%	16.5%	83.5%	10.2%	89.8%	47.1%	52.9%
District of Columbia	90.7%	9.3%	82.2%	17.8%	12.5%	87.5%	39.5%	60.5%
DoDDS	—	—	—	—	—	—	—	—
Florida	23.6%	76.4%	19.0%	81.0%	13.2%	86.8%	30.9%	69.1%
Georgia	22.8%	77.2%	18.5%	81.5%	8.4%	91.6%	31.3%	68.7%
Hawaii	86.7%	13.3%	79.4%	20.6%	8.9%	91.1%	42.2%	57.8%
Idaho	2.6%	97.4%	1.3%	98.7%	15.5%	84.5%	50.7%	49.3%
Illinois	16.7%	83.3%	11.8%	88.2%	13.6%	86.4%	47.9%	52.1%
Indiana	6.0%	94.0%	6.7%	93.3%	18.4%	81.6%	50.7%	49.3%
Iowa	3.7%	96.3%	1.9%	98.1%	14.4%	85.6%	64.7%	35.3%
Kansas	5.4%	94.6%	8.6%	91.4%	10.9%	89.1%	43.5%	56.5%
Kentucky	6.3%	93.7%	2.9%	97.1%	11.8%	88.2%	38.3%	61.7%
Louisiana	29.4%	70.6%	39.3%	60.7%	6.7%	93.3%	32.5%	67.5%
Maine	3.4%	96.6%	1.0%	99.0%	16.4%	83.6%	47.7%	52.3%
Maryland	20.3%	79.7%	14.8%	85.2%	11.9%	88.1%	52.6%	47.4%
Massachusetts	7.4%	92.6%	3.5%	96.5%	16.2%	83.8%	52.8%	47.2%
Michigan	13.9%	86.1%	14.7%	85.3%	18.2%	81.8%	54.7%	45.3%
Minnesota	2.1%	97.9%	1.5%	98.5%	24.1%	75.9%	66.4%	33.6%
Mississippi	33.1%	66.9%	35.9%	64.1%	7.5%	92.5%	28.8%	71.2%
Missouri	5.7%	94.3%	5.7%	94.3%	12.2%	87.8%	43.8%	56.2%
Montana	3.6%	96.4%	3.4%	96.6%	20.9%	79.1%	59.0%	41.0%
Nebraska	1.7%	98.3%	4.2%	95.8%	12.8%	87.2%	53.9%	46.1%
Nevada	10.4%	89.6%	16.9%	83.1%	13.9%	86.1%	38.7%	61.3%
New Hampshire	1.5%	98.5%	4.4%	95.6%	12.2%	87.8%	43.8%	56.2%
New Jersey	10.3%	89.7%	16.4%	83.6%	14.5%	85.5%	32.3%	67.7%
New Mexico	31.9%	68.1%	22.6%	77.4%	13.9%	86.1%	46.9%	53.1%
New York	10.6%	89.4%	12.0%	88.0%	17.2%	82.8%	53.1%	46.9%
North Carolina	18.5%	81.5%	20.8%	79.2%	5.9%	94.1%	30.5%	69.5%
North Dakota	3.4%	96.6%	0.1%	99.9%	10.4%	89.6%	62.5%	37.5%
Ohio	10.1%	89.9%	7.7%	92.3%	14.5%	85.5%	47.4%	52.6%
Oklahoma	8.3%	91.7%	5.1%	94.9%	12.0%	88.0%	38.8%	61.2%
Oregon	5.2%	94.8%	4.5%	95.5%	26.1%	73.9%	52.2%	47.8%
Pennsylvania	9.4%	90.6%	7.6%	92.4%	20.1%	79.9%	52.5%	47.5%
Puerto Rico	—	—	—	—	—	—	—	—
Rhode Island	2.9%	97.1%	6.9%	93.1%	10.9%	89.1%	52.1%	47.9%
South Carolina	21.1%	78.9%	16.8%	83.2%	6.7%	93.3%	25.7%	74.3%
South Dakota	6.1%	93.9%	0.3%	99.7%	10.3%	89.7%	51.3%	48.7%
Tennessee	18.2%	81.8%	13.7%	86.3%	10.3%	89.7%	39.5%	60.5%
Texas	22.3%	77.7%	24.0%	76.0%	11.6%	88.4%	40.7%	59.3%
Utah	2.6%	97.4%	3.3%	96.7%	21.2%	78.8%	48.4%	51.6%
Vermont	0.0%	100%	2.8%	97.2%	21.7%	78.3%	53.8%	46.2%
Virgin Islands	—	—	—	—	—	—	—	—
Virginia	20.0%	80.0%	19.7%	80.3%	8.7%	91.3%	33.1%	66.9%
Washington	5.2%	94.8%	4.9%	95.1%	23.3%	76.7%	58.3%	41.7%
West Virginia	4.1%	95.9%	4.7%	95.3%	15.1%	84.9%	40.5%	59.5%
Wisconsin	1.3%	98.7%	4.9%	95.1%	19.1%	80.9%	63.8%	36.2%
Wyoming	3.2%	96.8%	3.2%	96.8%	22.2%	77.8%	54.8%	45.2%
U.S. Average	14.1%	85.9%	13.4%	86.6%	14.2%	85.8%	46.3%	53.7%

Note: "—" indicates no data collected. Race/ethnicity available for five categories.
Source: U.S. Department of Education, National Center for Educational Statistics, 1988 Schools and Staffing Survey, unpublished data.

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TABLE 21—STATE EFFORTS TARGETED AT MINORITY TEACHER RECRUITMENT

	FINANCIAL AID				SPECIAL RECRUITMENT EFFORTS			
	Scholarships	Loans	Fellowships	Other	Early Identification	Special Populations	IHE*/ Community College Collaboration	Other
Alaska	x							
Arkansas					x			
California				x		x		
Colorado				x				
Florida		x			x		x	
Hawaii					x			
Illinois								x
Indiana		x						
Kansas					x			
Louisiana		x						
Maryland					x		x	
Massachusetts							x	
Michigan							x	
Minnesota	x			x				
Missouri		x						
New Jersey		x	x		x			
New York				x				x
North Carolina		x			x			
Ohio		x						x
Oklahoma	x				x			x
Oregon		x						
South Carolina				x	x			
Tennessee	x	x		x	x			
Utah		x						
Virginia		x						
Wisconsin		x						x

Note: In addition, three states report that certain recruitment efforts not specifically aimed at minorities have resulted in attracting numbers of minorties into teaching: Connecticut's efforts in recruiting special populations, Wisconsin's efforts in early identification, and the District of Columbia's efforts in both recruiting special populations and early identification.
*-Institution of Higher Education
Source: American Association of Colleges for Teacher Education "Teacher Education Policy in the States: A 50-State Survey of Legislative and Administrative Action", December 1990.

TABLE 22— REFORM EFFORTS IN MATHEMATICS

	States Using NCTM Standards to Revise State Curriculum Framework or Guide for Math Education		
	Curriculum Guide Revised	**Revision In Process**	**Current or Revised Guide Date**
Alabama	NO	NO	1987
Alaska	NO	YES	1991
Arizona	NO	NO	1987
Arkansas	NO	YES	FALL, 1991
California	NO	YES	WINTER,1991
Colorado	NG	—	—
Connecticut	NO	YES	SPRING, 1992
Delaware	NO	YES	FALL, 1991
District of Columbia	NO	YES	FALL, 1991
Florida	NO	YES	SUMMER, 1991
Georgia	NO	YES	1992
Hawaii	NO	YES	FALL,1991
Idaho	YES	—	1990
Illinois	NO	NO	1986
Indiana	YES	—	WINTER,1990
Iowa	NO	YES	1991-92
Kansas	NG	—	SPRING,1991
Kentucky	YES	—	SPRING,1990
Louisiana	NO	YES	WINTER,1991
Maine	NG	—	—
Maryland	NO	NO	1985
Massachusetts	NG	—	—
Michigan	NO	NO	SPRING,1989
Minnesota	YES	—	FALL,1990
Mississippi	NO	YES	FALL, 1991
Missouri	NO	NO	1981
Montana	NG	—	—
Nebraska	NO	YES	WINTER, 1991
Nevada	YES	—	WINTER, 1991
New Hampshire	NG	—	—
New Jersey	YES	—	FALL, 1989
New Mexico	NO	YES	WINTER, 1992
New York	YES	—	WINTER, 1990
North Carolina	NO	YES	SPRING, 1991
North Dakota	NO	NO	1986
Ohio	YES	—	1991
Oklahoma	YES	—	WINTER, 1991
Oregon	NO	NO	1987
Pennsylvania	NO	YES	SUMMER, 1992
Rhode Island	NO	YES	SUMMER, 1992
South Carolina	NO	YES	WINTER, 1991
South Dakota	NG	—	—
Tennessee	NO	YES	SPRING, 1991
Texas	NO	YES	SPRING, 1991
Utah	NO	YES	SUMMER, 1991
Vermont	NG	—	—
Virginia	YES	—	1988
Washington	NO	YES	FALL, 1991
West Virginia	YES	—	WINTER, 1990
Wisconsin	NO	YES	SUMMER, 1992
Wyoming	NG	—	—

Notes: *state is expecting to "develop" a guide by this date (which will be based on the NCTM).
NG = No Guide/Framework
"—" Not Applicable
Source: Council of Chief State School Officers' 1991 Reform Efforts in Mathematics Survey.

TABLE 23—CURRENT SUPPLY OF TEACHERS IN HIGH SCHOOL MATHEMATICS AND PHYSICS

	Total Assigned Math	Out of Field	Over Age 50	Total Assigned Physics	Out of Field	Over Age 50
Alabama	1,597	6%	13%	305	23%	18%
Alaska	—	—	—	—	—	—
Arizona	1,304	—	—	—	—	—
Arkansas	(P) 650	5%	15%	220	18%	22%
California	9,684	19%	26%	868	15%	22%
Colorado	1,297	31%	22%	—	—	—
Connecticut	1,453	0%	20%	243	0%	29%
Delaware	(P) 240	5%	28%	(P) 41	24%	29%
District of Columbia	—	—	—	—	—	—
DoDDS	—	—	—	—	—	—
Florida	—	—	—	632	—	—
Georgia	—	—	—	—	—	—
Hawaii	831	—	17%	39	—	21%
Idaho	649	3%	19%	104	4%	31%
Illinois	3,745	22%	23%	293	19%	32%
Indiana	2,298	—	17%	368	—	25%
Iowa	1,487	—	18%	390	—	21%
Kansas	1,179	—	21%	262	—	23%
Kentucky	1,659	11%	10%	220	13%	12%
Louisiana	3,565	—	—	241	—	—
Maine	796	—	15%	173	—	21%
Maryland	2,298	1%	—	—	—	—
Massachusetts	3,513	—	—	269	—	—
Michigan	3,339	—	24%	261	—	29%
Minnesota	1,811	3%	29%	366	10%	33%
Mississippi	719	7%	17%	46	52%	20%
Missouri	1,999	2%	15%	361	15%	21%
Montana	535	15%	19%	132	13%	17%
Nebraska	—	—	—	—	—	—
Nevada	673	17%	22%	41	2%	20%
New Hampshire	600	—	—	32	—	—
New Jersey	(P) 4,375	0%	19%	(P) 82	0%	28%
New Mexico	643	2%	20%	78	—	17%
New York	7,853	8%	20%	1158	19%	27%
North Carolina	2,966	5%	10%	331	5%	17%
North Dakota	471	0%	13%	125	0%	16%
Ohio	4,254	2%	13%	751	1%	14%
Oklahoma	1,674	16%	11%	240	15%	18%
Oregon	1,222	15%	22%	106	—	—
Pennsylvania	5,704	8%	19%	670	6%	26%
Puerto Rico	—	—	—	—	—	—
Rhode Island	(P) 418	0%	15%	(P) 44	0%	18%
South Carolina	1,853	9%	13%	210	8%	17%
South Dakota	707	52%	22%	125	61%	18%
Tennessee	1,872	4%	14%	238	9%	21%
Texas	9,834	—	—	909	—	—
Utah	1,114	6%	22%	69	5%	19%
Vermont	—	—	—	—	—	—
Virgin Islands	—	—	—	—	—	—
Virginia	3114	3%	19%	323	12%	31%
Washington	—	—	—	—	—	—
West Virginia	906	—	—	122	—	—
Wisconsin	1,960	—	21%	374	—	30%
Wyoming	464	—	—	98	—	—

Notes: (P) indicates only teachers with primary assignment reported. "—" indicates no data reported.
Source: State Departments of Education. Data on Public School, Fall 1989. N. Carolina Fall 1988. Council of Chief State School Officers, State Education Assessment Center, Washington, D.C., 1990.

TABLE 24—COURSE ENROLLMENTS IN MATHEMATICS AND SCIENCE

	Estimated Proportion of High School Students Taking Key Courses 1989–90					
	Math			Science		
	Level 1 (Algebra I)	Level 3 (Algebra II)	Level 5 Calculus	Biology First-Year	Chemistry First-Year	Physics First-Year
Alabama	70%	46	6%	95+%	38	21%
Alaska	—	—	—	—	—	—
Arizona	—	—	—	—	—	—
Arkansas	88%	48	5%	95+%	33	13%
California	92%	44	9%	91%	33	16%
Colorado	—	—	—	—	—	—
Connecticut	74%	61	14%	95+%	62	36%
Delaware	73%	43	17%	95+%	48	19%
District of Columbia	65%	39	3%	75%	46	13%
DoDDS	—	—	—	—	—	—
Florida	78%	42	9%	95+%	44	19%
Georgia	—	—	—	—	—	—
Hawaii	52%	33	4%	88%	40	21%
Idaho	95+%	64	6%	80%	26	15%
Illinois	77%	39	9%	78%	40	20%
Indiana	68%	45	8%	95+%	42	19%
Iowa	92%	50	9%	95+%	57	27%
Kansas	66%	47	9%	95+%	45	17%
Kentucky	81%	54	6%	95+%	45	14%
Louisiana	95+%	64	4%	90%	50	21%
Maine	84%	64	—	94%	58	—
Maryland	94%	51	13%	95+%	61	27%
Massachusetts	—	—	—	—	—	—
Michigan	—	—	—	—	—	—
Minnesota	90%	55	12%	95+%	44	23%
Mississippi	85%	58	3%	95+%	55	17%
Missouri	95%	58	8%	86%	41	16%
Montana	94%	65	6%	95+%	48	24%
Nebraska	75%	54	6%	95+%	46	21%
Nevada	90%	32	5%	65%	33	13%
New Hampshire	—	—	—	—	—	—
New Jersey	—	—	—	—	—	—
New Mexico	95+%	47	8%	95+%	33	15%
New York	69%	46	12%	95+%	50	28%
North Carolina	67%	51	8%	95+%	47	15%
North Dakota	95%	64	3%	95+%	54	24%
Ohio	80%	47	8%	95+%	49	20%
Oklahoma	95+%	60	8%	93%	37	10%
Oregon	—	—	—	—	—	—
Pennsylvania	88%	57	16%	95+%	56	29%
Puerto Rico	—	—	—	—	—	—
Rhode Island	—	—	—	—	—	—
South Carolina	69%	55	7%	95+%	51	16%
South Dakota	—	—	—	—	—	—
Tennessee	79%	54	4%	88%	42	11%
Texas	82%	54	5%	95+%	40	12%
Utah	82%	63	13%	—	37	—
Vermont	—	—	—	—	—	—
Virgin Islands	—	—	—	—	—	—
Virginia	81%	55	11%	95+%	57	23%
Washington	—	—	—	—	—	—
West Virginia	73%	42	2%	95+%	40	—
Wisconsin	79%	36	9%	95+%	51	25%
Wyoming	73%	29	8%	86%	36	16%
U.S. Total	81%	49%	9%	95+%	45%	20%

Note: "—" indicates no data reported.
Source: State Departments of Education. Data on Public Schools, Fall 1989; North Carolina and Wisconsin, Fall 1988 Council of Chief State School Officers, State Education Assessment Center, Washington, D.C., 1990.

47

TABLE 25—PERCENT OF TEACHERS INVOLVED IN MAKING SELECTED DECISIONS, 1987

	Choosing Textbooks	Shaping the Curriculum	Setting Promotion and Retention Policies
Alabama	71%	51%	38%
Alaska	79	68	45
Arizona	78	61	43
Arkansas	88	51	39
California	74	62	41
Colorado	83	70	38
Connecticut	73	68	33
Delaware	84	71	30
District of Columbia	—	—	—
Florida	64	42	21
Georgia	74	54	35
Hawaii	91	69	37
Idaho	83	67	34
Illinois	86	62	39
Indiana	90	71	35
Iowa	90	75	37
Kansas	90	76	37
Kentucky	85	64	45
Louisiana	63	40	27
Maine	89	82	47
Maryland	61	44	24
Massachusetts	76	71	29
Michigan	87	66	41
Minnesota	88	79	45
Mississippi	81	59	36
Missouri	85	69	35
Montana	90	78	44
Nebraska	87	75	32
Nevada	73	46	25
New Hampshire	79	76	42
New Jersey	73	66	33
New Mexico	88	67	34
New York	78	62	36
North Carolina	76	53	36
North Dakota	92	71	43
Ohio	84	70	29
Oklahoma	92	62	37
Oregon	87	72	41
Pennsylvania	84	74	33
Puerto Rico	—	—	—
Rhode Island	68	70	31
South Carolina	87	61	30
South Dakota	90	76	49
Tennessee	71	55	38
Texas	78	62	24
Utah	76	63	26
Vermont	93	85	50
Virgin Islands	—	—	—
Virginia	82	61	30
Washington	78	68	36
West Virginia	67	43	27
Wisconsin	87	77	34
Wyoming	89	81	39
U.S. Average	79	63	34

Note: "—" indicates no data collected.
Source: The Carnegie Foundation for the Advancement of Teaching, The Condition of Teaching: A State-by-State Analysis, 1988.

48

TABLE 26—SELECTED CHARACTERISTICS OF PUBLIC SCHOOL TEACHERS' CURRENT TEACHING ASSIGNMENTS,1987

	Average Number of Students per Class	Number of Students Per Typical Class			Percent of Teachers Feelings About Most Typical Size Class			Avg Number of Hrs Per Week Spent On Job			Teaching Subjects Unqualified to Teach
		Less Than 19	20-29	Greater Than 30	Too Large	About Right	Too Small	Less Than 40	40-59	Greater Than 60	
Alabama	26	10	61	28	38	61	1	10	83	7	20
Alaska	21	33	60	7	25	74	2	6	80	15	29
Arizona	25	15	65	21	43	56	2	7	82	11	25
Arkansas	22	24	68	7	29	71	1	8	82	11	20
California	28	7	38	55	66	33	2	8	75	16	28
Colorado	23	21	69	11	31	67	2	9	78	13	23
Connecticut	20	40	60	0	26	74	0	21	72	7	15
Delaware	23	20	72	9	37	63	0	10	78	11	13
District of Columbia	—	—	—	—	—	—	—	—	—	—	—
Florida	26	12	58	31	49	50	1	10	82	8	16
Georgia	25	11	74	16	37	63	1	6	80	14	24
Hawaii	26	12	61	28	55	44	1	14	72	14	29
Idaho	24	15	67	18	38	59	2	6	81	12	22
Illinois	23	24	59	16	31	67	2	10	76	14	18
Indiana	23	21	69	8	35	65	0	9	78	13	19
Iowa	21	36	58	7	20	79	1	7	78	15	18
Kansas	20	42	53	5	20	77	3	9	78	12	16
Kentucky	24	14	72	15	37	62	1	15	77	8	25
Louisiana	24	16	71	13	34	64	1	17	72	10	20
Maine	20	29	71	1	28	70	3	8	80	12	17
Maryland	25	11	66	23	41	59	1	7	79	15	20
Massachusetts	21	28	67	4	27	71	2	20	73	7	18
Michigan	25	11	66	22	47	52	1	14	79	7	22
Minnesota	25	13	69	18	44	55	1	8	81	11	25
Mississippi	24	12	71	17	32	66	2	10	81	9	17
Missouri	22	24	66	19	32	67	1	10	78	11	15
Montana	20	36	61	3	24	72	4	6	84	10	14
Nebraska	20	40	53	6	21	74	5	7	78	15	18
Nevada	26	13	61	27	48	50	2	13	76	11	20
New Hampshire	21	32	65	3	26	73	1	8	80	11	12
New Jersery	20	35	60	4	25	74	1	23	72	6	20
New Mexico	23	19	72	9	32	66	2	12	76	12	21
New York	22	23	69	8	31	67	2	19	72	9	14
North Carolina	25	7	83	10	47	53	1	5	82	13	20
North Dakota	19	45	51	4	19	74	7	9	78	13	18
Ohio	24	18	76	6	34	65	1	12	78	10	20
Oklahoma	21	34	59	6	25	72	3	10	77	13	21
Oregon	23	19	75	6	33	65	2	6	78	16	20
Pennsylvania	23	18	73	9	38	62	0	14	81	5	15
Puerto Rico	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	22	20	78	2	33	66	0	28	70	2	16
South Carolina	23	20	73	6	29	70	2	11	80	9	17
South Dakota	19	42	55	3	20	77	3	8	77	15	21
Tennessee	25	12	65	23	53	45	1	9	80	11	19
Texas	22	28	61	11	24	74	1	6	79	16	19
Utah	28	6	49	45	58	41	1	10	79	11	30
Vermont	19	44	54	1	23	76	1	10	80	10	19
Virgin Islands	—	—	—	—	—	—	—	—	—	—	—
Virginia	22	21	71	8	33	67	1	9	80	11	22
Washington	25	13	68	19	44	54	2	6	83	10	30
West Virginia	21	26	71	4	20	78	2	12	75	12	23
Wisconsin	22	21	74	5	29	69	2	9	82	9	17
Wyoming	20	41	56	2	20	76	4	6	81	12	16
U.S. Average	23	20	64	16	36	62	1	11	78	11	20

Note: "—" indicates no data collected.
Source: The Carnegie Foundation for the Advancement of Teaching, The Condition of Teaching: A State-by-State Analysis, 1988.

TABLE 27—PERCENT OF TEACHERS REPORTING VARIOUS PROBLEMS IN THEIR SCHOOLS, 1987

	Disruptive Classroom Behavior	Student Absenteeism	Student Apathy	Lack of Parental Support	Violence Against Students	Violence Against Teachers	Alcohol	Drugs other Than Alcohol	Abused/ Neglected Students	Poor Health Among Students
Alabama	92	84	87	89	40	22	44	52	83	65
Alaska	87	80	84	90	34	17	53	60	92	74
Arizona	87	89	90	91	45	22	38	51	90	76
Arkansas	90	88	91	92	46	24	53	59	90	74
California	90	89	87	90	49	26	42	48	90	74
Colorado	88	86	89	90	48	22	51	56	90	74
Connecticut	84	75	83	85	42	23	44	48	86	59
Delaware	92	86	90	95	54	28	50	54	91	76
District of Columbia	—	—	—	—	—	—	—	—	—	—
Florida	92	89	92	94	58	38	45	57	88	73
Georgia	91	84	91	90	48	28	39	45	89	71
Hawaii	93	91	93	95	76	44	45	53	89	74
Idaho	88	87	91	92	42	21	55	56	92	72
Illinois	79	74	85	89	34	18	39	42	84	62
Indiana	89	84	89	91	41	19	51	59	89	71
Iowa	80	78	86	87	35	16	63	63	88	61
Kansas	81	78	87	86	33	18	52	53	88	67
Kentucky	88	86	89	89	38	23	35	45	90	74
Louisiana	85	82	89	88	43	29	36	45	83	67
Maine	85	79	84	88	32	13	45	48	96	75
Maryland	90	78	86	89	50	27	43	49	85	64
Massachusetts	84	82	85	85	48	28	56	62	86	63
Michigan	87	80	89	89	50	24	45	50	91	72
Minnesota	86	80	88	89	39	19	61	59	94	68
Mississippi	81	80	82	89	37	22	41	50	77	62
Missouri	90	87	89	92	45	24	56	58	90	76
Montana	78	77	86	88	32	19	58	55	88	64
Nebraska	83	75	88	88	36	18	62	55	88	63
Nevada	88	85	92	92	50	30	51	54	92	71
New Hampshire	87	76	82	88	38	16	49	50	92	69
New Jersey	87	71	83	85	41	21	42	45	81	54
New Mexico	83	89	90	89	43	23	58	65	90	71
New York	91	82	90	90	46	26	59	64	91	66
North Carolina	91	87	92	94	48	32	45	50	89	76
North Dakota	81	65	81	85	22	11	57	52	83	53
Ohio	87	80	90	90	46	24	55	58	92	71
Oklahoma	85	84	90	90	37	23	56	63	91	70
Oregon	86	83	86	90	42	15	48	54	93	77
Pennsylvania	84	83	89	89	45	25	57	60	89	68
Puerto Rico	—	—	—	—	—	—	—	—	—	—
Rhode Island	91	83	85	89	53	22	47	54	88	67
South Carolina	87	76	85	93	46	27	39	45	86	72
South Dakota	74	68	82	84	28	16	55	49	88	64
Tennessee	88	88	90	91	41	26	39	47	91	76
Texas	81	85	89	92	41	24	51	61	89	71
Utah	87	82	86	88	44	18	43	48	96	64
Vermont	86	77	83	88	36	14	54	58	95	77
Virgin Islands	—	—	—	—	—	—	—	—	—	—
Virginia	91	82	88	91	43	25	41	46	88	70
Washington	88	87	91	91	44	19	56	62	95	79
West Virginia	87	86	88	91	39	21	41	45	89	76
Wisconsin	84	76	86	91	39	24	57	55	93	66
Wyoming	79	76	83	87	25	10	40	41	89	66
U.S. Average	87	83	88	90	44	24	49	54	89	69

Notes: "—" indicates no data collected.
Source: The Carnegie Foundation for the Advancement of Teaching, The Condition of Teaching: A State-by-State Analysis, 1988

TABLE 28—STATE INITIATIVES TO RESTRUCTURE LEARNING

STATE	TYPE	SUMMARY
ALABAMA	Curriculum Revision	"The Alabama Facilitator Project" offers four programs to local schools. Each program encourages and supports critical thinking skills. They include: Critical Analysis and Thinking Skills (CATS, grades 9–12); Talents Unlimited (grades 1–6), Project Success Enrichment (grades 2–8), and Impact (grade levels not reported). Professional development activities in the past have included: Orientation to Space for Teachers, Science Workshop for Middle School Teachers, SeaLab and activities in foreign language acquisition. The SEA supports this initiative through its 1984 *A Plan for Excellence: Alabama's Public Schools*. The plan recommends coursework that challenges all students to think, create, and reason, and encourages the schools to assess the status of critical thinking instruction and provide additional instruction if necessary.
ALABAMA	Curriculum Revision	The Alabama Course of Study: Mathematics emphasizes problem-solving and stresses analytical reasoning. All students in grades K–12 mathematics classes are served in this initiative with fundamental changes in grades 7 and 8. Thinking skills are emphasized throughout the mathematics curriculum. Students are asked to solve open-ended problems, reason in a variety of formats, make logical predictions based on realistic data, and communicate mathematical ideas involved in solving equations. This initiative was influenced by the national movement to improve mathematics education, the publication *Curriculum and Evaluation Standards for School Mathematics* by the National Council of Teachers of Mathematics, and the perceived need for improvement in mathematics for many Alabamians.
ALABAMA	Curriculum Revision	Project WILD's main project elements include problem-solving and decision making skills in determining human action regarding the environment—wildlife in particular. Project WILD is both interdisciplinary and supplementary. It can be used to teach basic skills in science, social studies, language arts, mathematics, art, music, and physical education. All grades K–12, as well as special education students, can participate in Project WILD. Critical thinking is embedded within a wide variety of instructional strategies. Project Wild was begun in Alabama as a result of a need to develop long term approaches to environmental problems as well as to foster the development of critical thinking skills in children. The main goal of the project is to assist learners in developing knowledge and skills that result in responsible human actions regarding wildlife and the environment. Outcomes measured by the state show a heightened awareness, appreciation, and understanding of wildlife and natural resources among students while they learn to make responsible decisions regarding them.
ALASKA	Curriculum Revision	"Science, Technology and Society in Alaska" (STS) promotes the teaching of critical thinking through science, social studies, and technology in academic disciplines. STS serves and targets all students, K–12. STS is incorporated into the regular subject instruction emphasizing how technology affects more and more aspects of our lives.
ALASKA	Curriculum Revision	"Student Outcomes" is a state curriculum initiative implemented in 1990 that incorporates critical thinking into regular classroom instruction. It requires that each school district develop, with community involvement, the skills students must learn to attain specified outcomes.
ALASKA	Staff Development and Teacher Preparation	The Alaska Staff Development Network promotes the teaching of critical thinking through a series of statewide staff development workshops. The Network pools resources to improve the quality and coordination of training for the Alaskan teachers and administrators. The Network was founded on the belief that the unique professional growth needs of Alaska's teachers and administrators can be best met by strengthening collaborative relationships among 50 school districts, NEA–Alaska, the Alaska Council of School Administrators, and Alaska's colleges and universities.
ARIZONA	No state or local initiative(s) reported.	
ARKANSAS	Curriculum Revision	The "Multi-cultural Reading and Thinking" (McRAT) initiative involves reading, thinking, and writing with a multi-cultural focus. McRAT develops students' critical thinking abilities and multi-cultural concepts through direct instruction. Students are asked to read multi-cultural literature, both narrative and expository, to think critically about what they have read, and to communicate what they have learned in writing. Instructional goals focus on four categories of reasoning skills that students can use in academic subjects such as reading, literature and social studies. These four categories include: analysis, comparison, inference/interpretation, and evaluation. These are fundamental frameworks of inquiry, problem-solving, and critical thinking. Students learn explicit strategies for each category as well as metacognitive strategies which help them plan, monitor, and evaluate their critical thinking processes. Teachers and students apply criteria derived from the thinking strategies to determine the success of critical thinking assignments. McRAT targets grade levels 4, 5, and 6. It serves 2,200 students in 15 school districts.
CALIFORNIA	Student Assessment	The California Assessment Program tests all public school students annually in grades 3, 6, 8, and 12. The areas currently assessed at grades 3, 6, and 12 are English-language arts and mathematics. In addition, the grade 6 test assesses history—social science and science, focusing on higher-order thinking skills. The tests at grades 8 and 12 also include an assessment of actual student writing. Breaking away from exclusive reliance on multiple-choice tests, CAP has begun introducing more authentic, performance-based assessments that indicate more directly what students actually know, how well they can think, and what they can do.
CALIFORNIA	State Curriculum Revision	This initiative has two components: Model Curriculum Standards for grades 9–12, and Model Curriculum Guides for grades K–8. These documents target the academic disciplines of math, literature, language arts (particularly writing), history/social science, science, foreign language, and visual/performing arts. Included under each academic discipline are critical thinking or problem-solving. The MCS&G support the development of student capacities for thought in line with the state's effort to establish clearly defined standards of student performance that incorporate intellectual activities typical of successful achievement in the real world. The MCS&G are concerned with the preparation of students for employment and citizenship, and their intellectual, ethical, cultural, emotional, and physical growth.
CALIFORNIA	Curriculum Revision	The impetus for the middle grades curriculum came from the Middle Grades Task Force report, *Caught in the Middle*. The report includes the chapter, "Learning to Learn" which stresses the importance of independent and cooperative learning situations to facilitate "mastery of new skills including higher order thinking and communicating skills." One of the recommendations is the formation of a statewide network of partnership schools working together to become state-of-the art middle schools. California has worked with 115 schools for the past two years and is now in the process of forming a second statewide network of 111 schools. The state is working to change the way instruction is delivered to middle grade students based on knowledge of their developmental characteristics.

STATE	TYPE	SUMMARY
CALIFORNIA	Policy Reform	SB813 passed in July, 1983 and calls for education reform in California. SB813 legislates reconstructed curriculum, instruction, and assessment programs that promote students' capacities for productive thought.
CALIFORNIA	Staff Development and Teacher Preparation	This initiative involves subject-specific research and methodology for improved teaching. These subject area projects are developed on state university campuses, and are based on the California Writing Project model. They include: the California Math Project and the California Literature Project. The model provides intensive staff development about the latest research and methodology for teaching a particular subject. All students in grades K–12 are served by this initiative. Critical thinking / problem-solving strategies are incorporated into the training of each of the teachers who are then trained to serve as trainers in their districts or schools.
CALIFORNIA	Curriculum Revision	Curriculum Frameworks serve all students in grades K–12. Each Framework includes critical thinking or problem-solving. The Frameworks cover the following academic disciplines: math, literature, and history / social studies. The Frameworks stress integration of thoughtful inquiry into the complete academic curriculum for all students. Emphasis is placed on the essential importance of the processes of thought and connections between ideas intrinsic to each academic content area.
COLORADO	Curriculum Revision	The state encourages local initiatives in critical thinking. Colorado reported many local initiatives that encourage the teaching and learning of critical thinking including: Tactics for Thinking, Thinking Skills: A Conceptual Framework; Dimensions of Thinking: A Framework for Curriculum and Instruction; Colorado Writing Project; Family Math; Equals; Math Solution; Rocky Mountain Math Education Consortium Summer Projects; Great Exploration in Math and Science; Chem in the Community; Voyage of Mimi; Enlist Micros; Family Science; Principles of Technology 9–12 Industrial Arts and Physics; Biological Science Curriculum Study K–6; Chem Understanding for Public Understanding Program; Decisions for Today and Tomorrow—Issues in Science Technology and Math; and Global Science.
CONNECTICUT	Staff Development and Teacher Preparation	The Institute for Teaching and Learning offers a variety of professional development experiences for teachers of grades K–12. Three major formats are used: (1) in-depth conferences on particular topics, (2) two week workshops and seminars on particular topics, and (3) Program Improvement Institutes. The Program Improvement Institutes are designed to help school districts improve their programs in selected areas. Grades K–12 and all academic disciplines are targeted.
CONNECTICUT	Student Assessment	Connecticut Assessment of Educational Progress (CAEP) emphasizes critical and creative thinking skills in eleven mandated curriculum areas. These areas included art, music, business and office education, English, language arts, science, foreign language, industrial arts and technology education, drafting, graphic arts and small engines. Grade levels 4, 8, and 9–12 are targeted. The goals of the CAEP assessments are to: provide achievement results; compare the achievement of Connecticut students with students nationally when possible; and encourage local school districts to utilize CAEP instruments. The initiative was implemented in 1972, and became Common Core of Learning Assessment in 1989 and is integrated into the classroom.
CONNECTICUT	Student Assessment	Connecticut Common Core of Learning Assessment involves Mathematics and Science for all participating students, in grades 9–12. The state's science and mathematics program examines students' knowledge and skills and thinking abilities within the contexts of science and mathematics. Each performance task combines knowledge of content, process, communication and collaboration. The mathematics and science assessment activity was begun in the state of Connecticut as a result of the national movement to improve mathematics and science education. This initiative was developed during 1989–1991 and will be implemented in 1991–1992.
CONNECTICUT	Student Assessment	The Connecticut Mastery Test (CMT) initiative targets students in grades 4, 6, and 8. The CMT includes a writing sample, problem-solving skills in mathematics, and inferential and evaluative comprehension skills in reading. The academic disciplines targeted are language arts / reading and mathematics. This initiative was a part of a June, 1984 amendment to the Connecticut General Statutes. This initiative was implemented during the 1985–1986 school year. State Board of Education policy and 1990 legislation has authorized the development of a grade 10 mastery test commencing in the fall of 1993.
CONNECTICUT	Staff Development and Teacher Preparation	Connecticut Teaching Competencies—Cooperating Competencies—Cooperating Teacher and Beginning Educator Support & Training Program involves fifteen teaching competencies identified and used as the basis of pre- and in-service training and assessment of first year teachers. All academic disciplines were targeted in the initiative. Grades targeted are 9–12, but students served are all students in grades K–12.
DELAWARE	Curriculum Revision	Delaware's new initiative is called the Thoughtful Classroom and was originally implemented in 1988. The grade levels participating in the program are K–12. The state reports only 20% of students have been served. The initiative targets all disciplines and incorporates elements such as teacher and student behavioral roles within the classroom. Thoughtful Classroom was integrated throughout all grade levels and teachers were trained through special modules to provide thinking skills to their students.
DISTRICT OF COLUMBIA	No state or local initiative(s) reported.	
FLORIDA	Curriculum Revision	The Progress in Middle Childhood Education Program (PRIME) initiative requires each school district to include provisions for teaching critical thinking skills in the context of the basic skills. All students in grades 4–8 are targeted and served. The academic disciplines involved in this initiative include: (for grades 4 and 5) mathematics, language arts, science, art, music, and social studies and (for grades 6–8) mathematics, communications (reading, writing, and speaking), science, and social studies. PRIME was implemented based on an extensive study of "The Forgotten Years". This study identified the urgent need for critical changes in the structure, organization and methods for delivering instruction. The program is incorporated into regular subject instruction and was implemented in the 1986–1987 school year.
GEORGIA	Curriculum Revision	The Quality Core Curriculum initiative identifies critical thinking skills across all subject areas and encourages an interdisciplinary approach to learning. The state reports that all students in the state are served by this initiative. The "writing process" is promoted as an instructional tool for thinking skills. A state writing assessment at grades 6, 8, and 10 reinforces the application of the initiative. The goals of this initiative include: instructional improvement throughout Georgia; equality in educational opportunities for all students; and student graduation with improved application and mastery of communication and reasoning abilities.
GEORGIA	Staff Development and Teacher Preparation	The Middle School Incentive Grant initiative provides additional planning for core teaching teams to meet the individual needs of students. Interdisciplinary planning focuses teacher efforts on critical thinking / study skills. Planning efforts incorporate exploratory learning and block planning to improve instruction focusing on higher intellectual skills.

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STATE	TYPE	SUMMARY
HAWAII	Staff Development and Teacher Preparation	Basic Academic Skills Improvement through Core Subjects (BASICS) focuses on strategic and collaborative curriculum planning, teaching and learning processes across disciplines. The instructional focus includes the infusion of critical thinking skills into subject areas such as language arts, mathematics, social studies, science, and Asian, European and Pacific languages. Other effective teaching and learning strategies are used. The initiative targets teachers in grades K–12 in seven districts statewide. This program has been incorporated into the regular subject instruction and was developed to teach students basic and higher order skills, including problem-solving, decision making, reasoning, and other higher order learning. An important part of the program has been the modelling of collaborative, interdisciplinary curriculum planning and teaching.
IDAHO	No local or state initiative(s) reported.	
ILLINOIS	Staff Development and Teacher Preparation	"Skills Essential for Learning" provided workshops throughout the state during school years 1985–86 and 1986–87. The program was designed to facilitate and encourage the direct teaching of critical thinking skills throughout the curriculum. Subsequent training is currently provided through the state's 18 Education Service Centers. Their trained staff provide technical assistance to local education agencies as needed. The goal for this program is to facilitate and encourage the teaching of critical thinking skills throughout the curriculum. Students in K–12 are served in every academic discipline. The program is incorporated into subject instruction.
ILLINOIS	Curriculum Revision	The Gifted Education initiative serves K–12 students in gifted education programs. The SEA reports that all academic disciplines may be involved in this initiative. The organization of critical thinking initiatives varies from school district to school district according to need and availability of resources. The use of creative or divergent thinking skills are included as one of the specific aptitudes defining gifted children in Illinois. Gifted Education was initiated in the 1970's and continues throughout the state at local and regional sites and at the annual state conference on gifted education. The goal is to infuse thinking skills throughout the curriculum at an appropriate level commensurate with the potential of the gifted child.
ILLINOIS	Other	The Urban Education Partnership Grant is an initiative that enables schools to develop programs that support improved academic achievement of students. A grant is obtained by a local school through a competitive process. The Partnership Grant funds over 40 programs, several of which emphasize teaching critical thinking.
ILLINOIS	Curriculum Revision	The "Alliance of Essential Schools" currently involves 10 schools and will expand during the 1990–91 school year to include 21 schools. The focus is for students to "learn to use their minds well." The SEA reports that the program's design should be shaped by the intellectual and imaginative powers and competencies students need, rather than by "subjects" conventionally defined.
INDIANA	Student Assessment	Indiana's restructuring task force is planning an initiative that will incorporate and disseminate programs on thematic learning, interdisciplinary middle school programs, and intensive mathematics instruction. Indiana also reports a testing program (ISTEP) which is based upon "proficiencies" which accent "thinking skills." Indiana's middle school task force is examining curricular reform.
IOWA	Staff Development	Assessing Thinking Skills is a state technical assistance initiative which provides guides to local districts regarding assessment of thinking and other higher order skills. The state reports that multiple assessment procedures to measure thinking should: be consistent with educational objectives; go beyond the mere recall of facts and information; include a variety of performance tasks (oral as well as written), embrace test items which may have several acceptable responses; provide feedback to the teacher indicating that the learner lacks factual information or has knowledge but fails to apply it; focus on processes in addition to covering content; encourage small groups to work together to resolve specific problems; utilize situations and problems within the classroom and from the environment outside of school; provide a variety of test experiences; examine achievement related behaviors such as openness, persistence, cooperation and motivation; and look for unanticipated outcomes. Grades 5–12 are targeted and only the students whose districts are directly involved in teaching thinking are served.
IOWA	Curriculum Revision	"A Guide to Developing Higher Order Thinking Across the Curriculum" synthesizes the varied and not always consistent ideas about thinking into an useful approach for Iowa educators as they work to infuse higher order thinking into their teaching. The goal is to give educators a sense of what is meant by higher order thinking skills, what its components are, some teaching strategies for developing this thinking in students, and some ways of assessing to what extent a district's instruction and curriculum promote growth in student thinking. All grades K–12 both in public and private schools are targeted in this initiative.
IOWA	Student Assessment	This initiative provides guidance to local education agencies to assess student thinking skills. According to the SEA, multiple assessment procedures to measure thinking should: be consistent with objectives; go beyond the mere recall of facts and information; include a variety of performance tasks, oral as well as written; embrace test items which may have several acceptable responses; provide feedback to the teacher indicating that the learner lacks factual information or has knowledge but fails to apply it; focus on processes in addition to covering content; encourage small groups to work together to resolve specific problems; utilize situations and problems within the classroom and form the environment outside of school; provide a variety of test experiences; examine achievement related behaviors such as openness and persistence; and look for unanticipated outcomes. The initiative targets grades 5–12 in selected districts that were involved in the explicit teaching of thinking. Most of the academic disciplines are involved in Assessing Thinking Skills. The purpose of this initiative was to provide guidance to LEA's in assessing thinking skills outcomes.
KANSAS	Student Assessment	The Mathematics Improvement Program aims through staff development activity and changes in student assessment, to modify instruction to include problem-solving, general critical thinking skills, deeper content, and analytical thinking. The program is supported by state assessment monies and federal funds, and serves all students in grades K–12 in mathematics.
KENTUCKY	Staff Development and Teacher Preparation	The Kentucky Office of Instruction is in the process of planning a staff development initiative for critical thinking. This plan includes four areas of training: awareness, planning, initial implementation, and advanced implementation. The sessions will be applicable to all students, K–12, and will promote the infusion of thinking skills into the content areas. (Content areas are: language arts, mathematics, science, social studies, health and fitness, arts and humanities.) The committee includes personnel from Curriculum and Staff Development, Compensatory Education, Exceptional Children, and the Office of Planning.
KENTUCKY	Curriculum Revision	The pending initiative, Program of Studies for Kentucky Schools, will provide administrators and teachers in local districts with a basis for establishing and revising curriculum. This program integrates critical thinking skills into classroom curriculum in grades K–12 and targets disciplines including mathematics, science, social studies, health and fitness, arts and humanities, and computer and technology.

STATE	TYPE	SUMMARY
LOUISIANA	No local or state initiative(s) reported.	
MAINE	Student Assessment	The Maine Educational Assessment (MEA) is conducted annually in grades 4, 8, and 11 and encompasses reading, writing, mathematics, science, social studies, and humanities. The assessment emphasizes critical thinking skills in all subjects. The assessment program is administered by the Division of Educational Assessment of the Department of Educational and Cultural Services, with the cooperation of the Division of Curriculum and the Division of Special Education.
MAINE	Staff Development and Teacher Preparation	The Regional Curriculum Networks are regular meetings in locations around the state to help educators keep up with current research and literature in business education, consumer and home economics, early elementary education, fine arts, foreign languages, guidance, health education, industrial technology, language arts/reading, mathematics, middle level education, physical education, science and social studies. The networks help educators keep abreast of important changes at the local and national levels regarding educational innovations.
MAINE	Staff Development and Teacher Preparation	Critical Skills Summer Institutes have been in operation since the summer of 1982. The operation of these Institutes has been under the management of the Critical Skills Program at Antioch/New England Graduate School in Keene, New Hampshire since 1986. Each Institute is an intensive six-day training experience that targets the teaching of Critical Skills (e.g. problem-solving, decision making, critical thinking) as an integral part of instruction. It focuses on classroom strategies that most effectively facilitate development of these skills in students within demands of a given curriculum.
MARYLAND	Staff Development and Teacher Preparation	The Statewide Thinking Skills Conference is a series of seven statewide critical thinking conferences that were sponsored by the state from October, 1984 through May, 1989. The conferences involved educators from all subject areas representing pre-K through university level. The Thinking Skills Program emphasized the development of students' thinking skills within the context of regular subject instruction. The conferences were designed to raise awareness among educators of the importance of developing students' thinking abilities and to stimulate the development of thinking skills initiatives in local school systems by providing current information regarding issues, approaches, and programs.
MARYLAND	Other	The State incentive grant program includes two phases: (1) Thinking Improvement Planning Grants, and (2) implementation of the proposed demonstration. Thinking Improvement Planning Grants provide funds to support the formation of district planning committees. These groups involve interested teachers, administrators, supervisors, and occasionally, parent representatives. They meet on a regular basis to survey the literature, explore issues, review programs, formulate goals, and develop plans for a pilot project. Nineteen of Maryland's 24 districts applied, and all received planning grants. The program targets math, reading, biology and computers for all grade levels.
MARYLAND	Student Assessment	The Criterion-Referenced Testing Program/Learning Outcomes is a pending initiative that proposes to focus on students' use of higher-order cognitive skills and on school performance. The following alternative exercise types are encouraged throughout testing program: short, extended and open-ended questions; performance tasks; and other alternative assessment modes/procedures (e.g., videotapes, oral interviews, portfolios). The assessment targets grade levels 3, 5, 8 and 11 and includes a mathematics and an integrated reading-writing/language usage, science and social studies component for each grade level. The Learning Outcomes will specify what students should know, be able to do, and how they should act as a result of their educational experiences. The Learning Outcomes will be used in developing the new criterion-referenced assessments.
MASSACHUSETTS	Student Assessment	This assessment initiative tests students' ability to respond to open-ended questions which require them to analyze, critique, organize and generate responses. This initiative began in 1986. The results of these exams are used to (1) supplement the information gained from more conventional testing programs; and (2) encourage teachers' ability to evaluate their students' progress in a more valid and instructionally useful manner.
MASSACHUSETTS	Curriculum Revision	The Solutions Unlimited: Computer Software/Video Package is an eight-unit series for middle school students. This series pairs the television program *Think About* with computer software and teaches students to approach problem-solving systematically. The video segments of this series present problems for students to solve and the computer software programs help them explore alternative solutions using varied computer applications.
MASSACHUSETTS	Other	The Horace Mann Teacher Program grants are awarded to compensate teachers who take on expanded responsibilities within their schools or districts. Such responsibilities include (but are not limited to): teacher training, curriculum/program development, assistance to dropouts/potential dropouts, inservice instruction and consulting, development/evaluation of teaching resources, and school-home-community liaison. The program's purpose is to provide financial incentives to qualified teachers to encourage the use of valuable teaching resources. During the 1989–90 school year, several Horace Mann teachers chose to develop projects dealing with critical thinking skills and problem-solving techniques.
MASSACHUSETTS	Staff Development and Teacher Preparation	The Curriculum Seminar Series sponsors over 100 seminars to teachers and administrators. The goals of the seminar series are (1) to provide technical assistance to teachers and administrators, (2) to encourage school personnel to think about their school as a locus for change and reform, and (3) to explore current research in the fields of teaching and learning. Several seminar topics focus on higher level thinking skills and problem-solving (i.e., Teaching Bloom's Taxonomy to Kids, Problem-Solving in Mathematics).
MICHIGAN	Curriculum Revision	The "Position Paper on Thinking Skills" acknowledges a variety of definitions and methodologies with respect to higher order learning. Through this promotional activity, the state encourages local districts to initiate activities that develop and promote higher order thinking in students. It is used at the discretion of local education agencies. The initiative serves all students in every grade level and targets all subject disciplines. It was designed to stimulate local districts to establish a thinking skills program as a priority for their students.
MICHIGAN	Student Assessment	The Michigan State Board of Education Essential Goals and Objectives for Science initiative serves grades K-9. The assessment initiative focuses on grades 3, 6, and 9. The targeted discipline is science. The initiative encourages the development of the following skills: observation/identification; classification; measurement; sequencing/ordering; informing; prediction; communication; interpretation; investigation; and controlling variables. These elements are incorporated into regular instruction through a process of introduction, development, reinforcement, and testing.
MICHIGAN	Curriculum Revision	Essential Goals and Objectives for Reading Education emphasizes student performance in reading (metacognition) which employs higher levels of thinking including inference, prediction, and the ability to hypothesize. This initiative serves all students in grades K–12 and targets grades 4, 7, and 10 for assessment.

STATE	TYPE	SUMMARY
MICHIGAN	Curriculum Revision	Two initiatives—Essential Goals and Objectives for Computer Education, and Essential Goals and Objectives for Social Studies—both serve all students in grades K–12. All disciplines are included in the computer education initiative. The computer initiative uses generic thinking skills identified as Theory Computer. The goal of this initiative is to understand how computer-related tools can be used for problem-solving. The Essential Goals and Objectives for Social Studies teaches thinking skills specifically in the context of the social studies curriculum.
MICHIGAN	Student Assessment	Essential Goals and Objectives for Mathematics Education serves students in grades K–12, targeting grades 4, 7, and 10 for assessment. The initiative includes efforts to support higher order skills in mathematics by focusing math assessment on those skills. The goal of this initiative is to determine state progress toward the improvement of mathematics education.
MINNESOTA	Curriculum Revision	The Home Economics Curriculum Project includes a problem-solving model developed around three themes: raising and expanding awareness of issues, conditions, and concerns; identification of related problems; and achievement of basic human goals. Two conceptual frameworks provide the overall structure for this curriculum model. They address discrepancies between basic human goals, existing social and economic conditions, and related responsible action. These frameworks are used as guides for identifying broad human goals; existing social, teaching, and economic conditions; and the practical reasoning processes necessary for critically addressing and solving problems. In conjunction with three Minnesota universities, the SEA provides curriculum, teaching examples and in-service training for teachers statewide. This initiative serves all students enrolled in home economics grades 5–12. Initial implementation began in 1980–81. Special needs students are not specifically targeted by this initiative.
MINNESOTA	Curriculum Revision	Model Outcomes documents are used by local education agencies when they review a curriculum to assess whether it and combined instructional practices accomplish state-mandated learner outcomes. Curriculum reviews are required at least once every 6 years. This initiative impacts student achievement only if individual teachers modify curriculum and instructional practices to include critical and higher level thinking. The Model Outcomes documents were developed during 1988–89, and attempt to integrate thinking skills into the entire curriculum K–12.
MINNESOTA	Curriculum Revision	*Thinking Through Technology* is a state publication that provides examples of student lessons which show challenging uses of technology. *Thinking Through Technology* advocates integration of critical/creative thinking in content areas by identifying and showing the uses of various technologies as they are incorporated in the design of student activities. The SEA distributes copies of the guide, *Thinking Through Technology*, and offers training to classroom teachers through the Emerging Technology Workshop series. The goal of this initiative is to assist local agencies in the development of capable student thinkers who are self-directed learners and producers of new information. The program serves students in grades 7–12 and targets all disciplines. Students affected by this initiative use technology as a learning tool which is integrated into various subject instruction.
MINNESOTA	Staff Development and Teacher Preparation	*Optimizing Student Learning: A Guide to Purposeful Thinking* (1990) describes the central elements of thinking skills programs and provides a framework for local education agencies to evaluate commercial and district-developed critical thinking programs. All students in grades K–12 are served by this initiative; all subject disciplines are targeted.
MISSISSIPPI	No state or local initiative(s) reported.	
MISSOURI	Curriculum Revision	The Program of School Restructuring and Curriculum Acceleration is an initiative by the state education agency together with nine Missouri elementary schools which attempts to eliminate the need for remedial education through a program of school restructuring and curriculum acceleration based upon Dr. Henry Levin's accelerated schools concept. The initiative strengthens the content of instruction in targeted schools and accelerates instruction for disadvantaged students; improves school climate and empowers teachers; and institutes accountability for educational results. The SEA Department of Elementary and Secondary Education provides a project director who coordinates activities of mutual interest among the nine project sites; serves as a liaison with Dr. Levin and his staff at Stanford University; and provides technical assistance to school plans. The project director arranges in-service training opportunities for school staff members and coordinates the work of college and university-based facilitators who support the program. This initiative serves students in nine schools, grades K–6, and all academic disciplines are targeted.
MISSOURI	Student Assessment	Core Competencies and Key Skills requires all school districts to include state identified core competencies and key skills in their curricula and regularly assess student mastery using criterion-referenced tests. The Department of Elementary and Secondary Education systematically selects competencies and skills which involve critical thinking strategies even though some could not be tested with mass-administered standardized tests. School districts are encouraged to assess the higher order skills locally using advice from the Department of Elementary and Secondary Education. All students in grades 2 through 10 must be assessed periodically using a state approved criterion-referenced test. Students with limited English proficiency and handicapped students whose individual education plans indicate otherwise are not included in the scoring results. Elements of this initiative include objective statements, curriculum alignment, mastery learning, and tests for analytical understanding. The academic disciplines targeted by this initiative are English, language arts, writing, science, mathematics, and social studies including citizenship. The SEA provides in-service education throughout the year for school staffs in incorporating the competencies and skills into their curriculum and implementing mastery learning strategies to ensure that students are mastering the skills. The program is incorporated into regular classroom instruction, and implementation began in 1987.
MONTANA	Policy Reform	Montana Accreditation Standards of 1989 include specific language concerning the teaching of critical thinking skills to middle school students. In addition to the ten regular school subjects, critical and creative thinking was incorporated in the regular school program on July 1, 1989. Schools that incorporate a program of thinking skills document the program with curriculum guides, class schedules and other means to comply with standards. All students in grades 6–8 (and sometimes 4–6) are served by this initiative.
MONTANA	Policy Reform	Montana Accreditation Standards, Cross-Content and Thinking Skills dictate that "the school district shall develop curricula at all grade levels and in all program areas (disciplines) that encourage students to understand and apply thinking and problem-solving skills. The curricula shall enable students to: (1) identify and define a problem; (2) learn methods of gathering, analyzing and presenting information; (3) practice logical, creative and innovative thinking and problem-solving skills in a variety of situations; and (4) apply the skills of decision making and reasoning."
NEBRASKA	No local or state initiative(s) reported.	

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STATE	TYPE	SUMMARY
NEVADA	Curriculum Revision	Math with Manipulatives serves all students grades K–8 using manipulatives to emphasize mathematical problem-solving and analytical reasoning in the classroom. The program is integrated into all mathematics instruction where students must use their prior knowledge and skills to solve each new problem. The initiative is targeted through other programs to aid special needs students.
NEVADA	Staff Development	The Voluntary In-service Program for teachers, librarians, and administrators emphasizes teaching for problem-solving, fluency, and flexibility of thought. The students served are in grades K–12 depending upon individual teacher voluntary participation in the program. The inservice class is advertised to all school districts in Nevada. The class requires 16 hours of instruction and offers either one unit of recertification or one unit of university credit. The disciplines that are targeted by this initiative are language arts social studies, and science.
NEVADA	Curriculum Revision	The Middle School Task Force will recommend middle level education initiatives to the 1991 Nevada state legislature. Instructional elements in the curriculum model will emphasize a variety of classroom organizational patterns, including independent study, small and large group instruction, tutorials, mentoring, cooperative-learning, appropriate educational technology, and the development of basic subject matter mastery while continuing development of basic literacy and computation skills. All students ages 10–15 years will be served by this initiative. Special needs students also are targeted by this initiative through the "Clark County, Nevada, Teaching Strategies for Thinking".
NEW HAMPSHIRE	Curriculum Revision	The New Hampshire Task Force on Performance Outcomes is state sponsored, and its goal is to outline the essential skills required of all high school graduates in such areas as critical and creative thinking, decision-making, problem-solving, communication, initiative, and leadership. A governor's task force has a separate committee developing recommendations for what every New Hampshire high school graduate should know in the academic disciplines.
NEW JERSEY	Student Assessment	The Department of Education made recommendations regarding the need to improve New Jersey students' mastery of critical thinking skills in reading, mathematics, and writing. It was felt that the current Grade 9 test did not sufficiently prepare students for success in the workplace and that a test assessing higher order skills was necessary. The state legislature accepted these recommendations and enacted legislation that required the development and administration of the Grade 8 Early-Warning Test and the Grade 11 High School Proficiency Test. The Grade 11 HSPT is to become a requirement for high school graduation in 1993. These tests were specified by statewide committees of educators, representatives of business and industry, citizens and others. The tests will be administered for the first time in 1990–91. Their focus is on essential critical thinking and problem-solving skills in reading, mathematics, and writing.
NEW JERSEY	Student Assessment	The High School Core Course Proficiency Program targets grades 9–12 and is incorporated into regular subject instruction. It is part of a larger state effort to raise academic standards and to create equity in access to the fundamental knowledge expected of students who take certain core courses. The state seeks to accomplish this goal by establishing core course proficiency in those courses most often taken to meet high-school graduation requirements.
NEW JERSEY	Student Assessment	Since 1987 the department has operated the Gifted Education program to support LEA efforts for initiating programs and services that encourage gifted students at all grade levels to develop to their fullest potential, while addressing their social and developmental needs. Grant monies are used to prepare and disseminate curricular materials which incorporate critical and/or creative thinking skills in a variety of subject areas.
NEW JERSEY	Curriculum Revision	Project PRISM, A Proposal to Create a Consortium for Improving Mathematics Curriculum, Instruction, and Assessment for students in grades K–8, involves radical changes in the mathematics curriculum and instructional methods focusing on a process-oriented, problem-solving approach to teaching and learning. The program incorporates critical thinking skills into regular mathematics instruction and calls for reform of curricular and instructional methods.
NEW YORK	Student Assessment	Social Studies Program Evaluation Testing details procedures to assess school progress toward the attainment of higher order thinking skills within the subject areas. All students in grades 6 through 8 are targeted by the assessment and are tested on content, concepts and skills accumulated from K–8 in the discipline of social studies.
NEW YORK	Student Assessment	Elementary Science Program Evaluation Test (ESPET) is a hands-on student performance assessment program composed of seven instruments, one of which requires students to conduct five different investigations manipulating equipment and to report their results in writing. The purpose of the assessment is: (1) to provide data to help local educators make decisions that can help them improve their elementary science program or maintain high quality programs, and (2) to help the state determine the extent to which local elementary science programs are functioning successfully and to determine where state technical assistance may be needed. The assessment is administered to all public and nonpublic grade 4 students and assesses outcomes of the state science syllabus for K–4. The only students not included are special education students, private schools that are exempt from any state testing, and any student absent on the day of testing. This inquiry assessment program encourages local elementary science programs to include the use of instruction that supports problem-solving.
NEW YORK	Staff Development and Teacher Preparation	The Regents Challenge for Excellence in Middle-Level Education Program promotes the use of instructional techniques and processes that capitalize on the unique developmental characteristics and individual needs of early adolescents. The educational program should emphasize and promote critical learning skills including information-gathering skills, thinking skills and decision-making skills. All academic disciplines are involved. The school decides whether critical thinking skills will be integrated or separated with the regular instruction classroom.
NEW MEXICO	Curriculum Revision	This Re: Learning project emphasizes active thinking by students. All students grades K–12 in the 25 districts participate. The program is integrated into all subject areas. Instructional practices are derived from the work of Theodore Sizer which embraces nine principles to encourage the use of questioning techniques, active participation, shared decision making and alternative forms of assessment which demonstrate mastery of subject matter. The state provides a coordinator who works with a task force to train teachers.
NORTH CAROLINA	Curriculum Revision	The Standard Course of Study integrates general thinking skills throughout the entire curriculum and is mandated by law. Thinking skills strategies are incorporated throughout all disciplines and grade levels. It requires school districts to reflect thinking skills in yearly plans of regional, local, and individual school improvement strategies. State and regional consultants provide technical assistance and support locally determined goals.
NORTH DAKOTA	Staff Development and Teacher Preparation	The Association of Supervision and Curriculum Development's "Thinking Skills" project is a cooperative initiative of the North Central Regional Educational Lab and was first implemented in 1987. The initiative consists of state level training of trainers and local district implementation of the project as deemed appropriate.

STATE	TYPE	SUMMARY
OHIO	Curriculum Revision	The State Model Competency Based Education Program (Mathematics) serves grades K–12. The program in mathematics includes elements such as problem-solving strategies and skills, and persuasive writing and reasoning. This initiative is a revision of the mandated competency based education of 1983. The goal of this initiative is to incorporate the skills of problem-solving and reasoning as part of the basic competencies needed in the study of mathematics. All students grades K–12 are affected by this initiative. It was implemented during the 1990–91 school year.
OHIO	Curriculum Revision	The SEA, in response to state legislation, developed a Model Competency Based Curriculum for Language Arts, K–12. In this initiative, reading, writing, speaking, listening, and viewing are integrated into the regular subject instruction of language arts. It was implemented during the 1990–91 school year.
OHIO	Staff Development	The Strategies For Success: Classroom Intervention emphasizes alternative teaching/learning classroom strategies. Several of these strategies involve higher level questioning skills. All grade levels and subject areas are targeted by this initiative; however, participation in the program is voluntary. This initiative results from Ohio's Strategic Plan for the 1990s. The program addresses successful intervention strategies that promote classroom learning in large groups, cooperative learning, and individual conference techniques.
OHIO	Curriculum Revision	The National Diffusion Network (NDN) is a project of the U.S. Department of Education to disseminate exemplary educational programs. The programs implemented in Ohio from the National Diffusion Network have emphasized creative or divergent thinking, general learning strategies or skills, persuasive writing and reasoning, and analytical thinking skills. The following programs are part of Ohio's efforts to implement NDN programs: CATS Program (Critical Analysis and Thinking Skills), Philosophy for Children, and IMPACT (Improving Minimal Proficiency by Activating Critical Thinking). This has been an ongoing initiative since 1982. Funding is provided by the U.S. Department of Education. This has facilitated the adoption of programs that address areas of identified needs including critical thinking.
OHIO	Curriculum Revision	The Curriculum Guide for Developmentally-Appropriate Early Childhood Education Programs is a decision-making matrix to be used by teachers (grades pre-K–3) through third grade) to develop, redesign, or enhance their curriculum. The intent of the Curriculum Guide is to incorporate the teaching and learning of critical thinking through developmentally-appropriate activities.
OHIO	Staff Development and Teacher Preparation	The purpose of the Model for Technology Education in Ohio is to develop general critical thinking strategies and skills, and to teach the workings of technology systems through technological problem-solving strategies and interdisciplinary experiences. The model curriculum was implemented in September, 1988. The curriculum is supported through the collaboration of the SEA, university teacher training programs, a network of cooperating school districts, and the professional teachers association.
OHIO	Other	The initiatives are research and demonstration projects being implemented by two districts that received awards for their proposals from the Ohio Department of Education. One district is implementing its Achieving Cognitive Enhancement (ACE) project; the other is developing Talents Unlimited: An Effective Model for Comprehensive Curriculum Development. The goal is to develop model projects for the service of gifted students. The initiatives focus on regular subject instruction in order to incorporate higher order thinking skills in all content areas.
OHIO	Staff Development and Teacher Preparation	The Middle School Home Economics Resource Guide was designed to help develop the empowering skills of practical reasoning, interpersonal communication, management, and citizenship. The Resource Guide affects the Consumer Homemaking courses offered in grades 6–8. The Resource Guide is designed for use with academically disadvantaged students in economically depressed areas.
OHIO	Student Assessment	This is an initiative for two-tier proficiency testing for graduation. To earn a high school diploma after July 1, 1993, each student must establish proficiency in reading, writing, mathematics, and citizenship. Learner outcomes appropriate for ninth grade and those appropriate for twelfth grade were adopted by the state and disseminated to all educators in all schools. Districts are responsible for ensuring that students have an opportunity to attain the required competencies prior to taking the test and to provide intervention for those who are not initially successful. Both the ninth-grade and twelfth-grade tests measure critical thinking abilities in reading, writing, mathematics and citizenship. The focus is on application, problem-solving, and analytical reasoning. Reading, mathematics, and citizenship tests have a selected-response format while the writing test involves a constructed-response format.
OKLAHOMA	Staff Development	The Teacher Training initiative emphasizes reading/thinking and writing/thinking strategies. Metacognition is encouraged for both teacher and students. This initiative serves all students in grades K–12. Nineteen thinking skills are identified and recommended for instruction and integrated into applicable content. They include: establish criteria, verify, summarize, integrate, infer, predict, identify general elements, identify attributes, determine adequacy and accuracy, recognize relationships, represent, compare, classify order, observe, recall, question, define and problem, and set goals. It is expected that all skills will be taught at all grade levels. Technical assistance is offered through in-service training in the Tactics for Thinking program and "Skylights: A Handbook for Teaching Thinking Skills". This initiative is integrated throughout the curriculum.
OREGON	Curriculum Revision	Common Curriculum Goals in Math involves staff development to ensure that all students grades K–12 receive instruction in problem-solving. Problem-solving becomes both content and characteristic of teaching. The academic discipline targeted is mathematics, however, the SEA encourages utilization of problem-solving techniques in other disciplines. Teacher conferences, trade journals and other materials are available to staff and administrators to provide knowledge and instructional techniques.
OREGON	Student Assessment	A pilot to Develop Open-Ended Assessment Procedures to Assess Problem-solving serves students in grades 3, 5, 8, and 11. Eventually, all students K–12 will participate in this initiative. The academic discipline targeted is mathematics. In-service training will be provided so that teachers will be able to analyze students' thinking capabilities to improve teaching performance and effectiveness.
OREGON	Staff Development	An in-service training conference administered by the SEA and teacher organizations serving teachers of all students grades K–12. The teachers receive training in problem-solving techniques is provided through local education agencies, the SEA and professional teacher organizations. The initiative targets mathematics, however, the state encourages techniques to be used in other disciplines. Problem-Solving is addressed as a separate theme and integrated with other themes in math.

STATE	TYPE	SUMMARY
OREGON	Student Assessment	The Oregon Statewide Assessment Program involves instructional reform and serves all students. However, it specifically targets grades 3, 5, 8, and 11. Areas emphasized include: reading, writing, mathematics, listening, speaking, study, and reasoning for these particular grades. The initiative stresses acquisition of the following skills: descriptive, narrative, persuasive, imaginative, and expository writing; reading comprehension and metacognition; mathematics problem-solving and analytic reasoning; evaluate listening and comprehension; inferential reasoning; and evaluation of the influence of mass media. The program is incorporated into regular subject instruction. The assessment instrument will be first administered during 1990–91.
PENNSYLVANIA	Student Assessment	The Broadening of Reading and Mathematics Competency Tests serves all students in grades 3, 5, and 8. This initiative was first implemented in March, 1990 and targets math and reading. This initiative updated tests to incorporate the latest measurement trends and methodologies and assess a broader range of student competencies than previous tests. The reading tests assess reading as a "dynamic process in which the reader interacts with the text to construct meaning." The assessment measures the reader's ability to process that which is: explicit, requiring the student to identify, locate or confirm information directly stated in the passage; implicit requiring the student to make use of textual information and prior knowledge to construct meaning and draw conclusions; and extended, requiring the student to respond to and think beyond the text. Content of the assessment program has been expanded to include a full range of concepts and skills generally found in the mathematics curriculum.
PENNSYLVANIA	Curriculum Revision	Analytical Thinking: A Goal of Quality Education is a multi-curriculum initiative encouraging the improvement of communication skills, mathematics, science and technology, citizenship, arts and humanities, analytical thinking, family living, work (personal career awareness and market skills), health, environment, self-esteem, and understanding others. All students grades K–12 are served by this initiative. Each learning objective from the state's twelve Goals of Quality Education must be included in planned courses to be taken by all students at least once in the elementary, once in the junior/middle, and once at the senior levels. The analytical thinking goal is divided into four parts: 1) development of information and management skills, 2) development of logical thinking skills, 3) development of problem-solving skills; and 4) development of decision making skills.
PENNSYLVANIA	Other	The State Survey of Thinking Skills Programs was established to determine/assess the need for state support of local critical thinking initiatives. The survey was sent to selected school districts in Pennsylvania identified by their long range plans and to those requesting survey forms. The thinking skills survey was designed to identify existing programs. The survey included questions pertaining to: the definition of the thinking program, determination of need, research which took place prior to program development, cost factors, level of implementation, length of time program has been in operation, integration and time allotted into school schedule, types of students targeted by program, materials utilized, long range implementation, outside aid, teacher training time, evaluation and assessment of program, number of schools and teachers from each district involved in program, and any previous thinking programs.
PENNSYLVANIA	Student Assessment	The Analytical Thinking Survey and Resource Guide: Program Summaries summarizes of critical thinking programs based on literature reviews and information from the developers of the programs. These programs target a wide variety of disciplines, and some are integrated into subject descriptions, while others are not. Not all of the approaches described in current thinking skills literature have been identified by the survey. The following is a list of programs that appeared in the state survey: Bloom's Taxonomy Program, CoRT (Cognitive Research Trust), Developmental Kindergarten Program, Home Study Skill Program, Instructional Enrichment, Junior Great Books, LOGO, Madeline Hunter Model of Staff Development, MAP, Mastery Learning, Pennsylvania Writing Project, Philosophy for Children, PIP (Professional Improvement Project), Project Light, Project ProCeed-Program(Professionals Committed to Excellence in Education), Structure of the Intellect, Think About, and Thinking Curriculum.
PUERTO RICO	Curriculum Revision	Curriculum Revision and Integration provides technical assistance to local districts. As a result of the Conference of Spain and Latin American Educators in 1978, the Puerto Rico SEA became interested in the critical thinking movement. The process of adopting a revised curriculum and integrating thinking skills for the public schools began in 1986–87. Critical thinking skills are incorporated into the regular (revised) curriculum.
RHODE ISLAND	Curriculum Revision	The Grade 3 Outcome: Language Arts and Mathematics initiative is a result of the Rhode Island Literacy and Dropout Prevention Act, 1987. This legislation mandates the following activities: K–3 focus which includes integrated language arts curriculum integrated across content areas (science, social studies, mathematics, health, art, and music); literature beyond the basal reading program; process writing; and accomplishment of grade 3 outcomes. It also includes reduction in class size, and curricula and staff development programs in K–3. The supplementary program includes instruction in language arts and mathematics in K–12. Critical thinking is part of the reading/writing connection. Comprehensive activities include metacognitive strategies and higher order thinking which are incorporated into all subject areas. Critical thinking is not isolated in the language arts curriculum.
RHODE ISLAND	Student Assessment	The State Assessment Program annually assesses critical thinking (higher order skills) in reading (reading comprehension) and in mathematics (problem-solving) using the Metropolitan Achievement Test (MAT) at grades 3, 6, 8 and 10. The MAT also provides a specially constructed "higher order thinking skills" score for students and groups which combines the higher order test items from all content sections of the MAT. In addition, the statewide Writing Assessment Program at grades 3 and 6 is a performance test requiring a complete two-day cycle of pre-writing activities, composing and editing. Writing samples are judged holistically, rather than by discrete basic skills elements. The writing assessment is developed and scored by Rhode Island teachers. Students at grades 3, 6, 8 and 10 must also take health knowledge and physical fitness tests annually. The health tests are comprehensive, but include strong components on substance abuse, nutrition, exercise and AIDS prevention. The State Assessment Program is mandated statewide and results are used to improve instruction and curriculum and to inform educational policy-making. School districts are offered technical assistance in the interpretation of their local reports.
RHODE ISLAND	Policy Reform	The Re: Learning from Schoolhouse to Statehouse is a total school and instructional reform initiative. School teams redesign the entire school program based on nine essential school principles of the Coalition of Essential Schools at Brown University. Emphasis is on essential skills and knowledge rather than comprehensive "coverage" of curriculum areas. The initiative is targeted on grades 7–12 in seven Rhode Island schools, but an elementary and middle school are involved also. The ability to think critically and to develop higher order skills are goals of the essential schools program. These skills and abilities are treated as the central purpose of all education. In addition to the Coalition of Essential Schools, the Education Commission of the States is a co-sponsor of this initiative. The Re: Learning initiative calls for a state-level policy group to examine policies and regulations that impede the progress of schools that have joined the Coalition of Essential Schools.

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STATE	TYPE	SUMMARY
SOUTH CAROLINA	Curriculum Revision	Target 2000—School Reform for the Next Decade Act was passed by the South Carolina legislature. The legislation requires the SEA and all school districts to emphasize higher order thinking skills in curricula at all levels. The SEA must assist the local school districts by locating, developing, and advising the districts on the development of materials and other aids which may be used to teach higher order problem-solving within existing subjects. The Tactics for Thinking Program produced by the Association for Supervision and Curriculum Development is being implemented by the SEA to conform with the state legislation. This program provides specific help for teachers in integrating critical thinking, creative thinking, and problem-solving skills into all areas of the curriculum at all grade levels. Teachers are trained in the instructional strategies of Tactics for Thinking and then train other teachers in the use of the program. Eighty-four percent of students in grades K–12 are served and all academic disciplines are targeted.
SOUTH DAKOTA	No local or state initiative(s) reported.	
TENNESSEE	No local or state initiative(s) reported.	
TEXAS	Curriculum Revision	This initiative is incorporated into the State Board of Education Long Range Plan 1985–1990 and implemented through the state's Realistic Educational Achievement Can Happen (REACH) Program. The 1985–1990 Long-Range Plan called for the coordination of statewide testing, textbooks, and instructional materials with the state-mandated curriculum. Although the state-mandated curriculum and the Texas Educational Assessment of Minimum Skills test (TEAMS) had begun to incorporate thinking skills in the early 1980s, REACH, the state department's technical assistance project, brought thinking skills into all Texas classrooms. The REACH initiative targeted priority state needs, including critical thinking.
TEXAS	Other	Technology demonstration sites will be established that foster critical thinking at selected pilot schools. The technology demonstration sites are pilot sites that examine the use of technology to establish an active learning environment to promote problem-solving to develop creative and divergent thinking skills and to enhance basic skills through higher order thinking skills. Selected pilots will be established in grades 2, 4, 6, 7, and 8.
TEXAS	Curriculum Revision	The integrated language arts curriculum has three essential elements: workshops throughout the state on how to implement an integrated language arts curriculum, publications such as in-service guides that address writing for the state-mandated Texas Assessment of Academic Skills (TAAS), and TI–IN television network presentation that emphasize critical thinking skills in student assessment program. The TI–IN television network provides educational and instructional programs throughout the state.
TEXAS	Student Assessment	Texas has developed a criterion-referenced test to assess student performance in the areas of mathematics, reading, and writing. Science and social studies will be phased in over the next five years. The Texas Assessment of Academic Skills (TAAS) has been structured to focus on problem-solving, reading, comprehension, and life skills. The goal in implementing the TAAS program is to increase the rigor of the state-mandated test by broadening the scope of content eligible for testing. By expanding the objectives eligible for testing, it encourages school districts to broaden the current curriculum.
TEXAS	Curriculum Revision	The mathematics section of the Texas Education Agency is working with curriculum committees from across the state to develop sample curriculum guides. The SEA will distribute these guides to local school districts prior to the time of implementation of new textbooks and revised essential elements. School districts may use them to update and revise their own curriculum guides. The mathematics essential elements revision will affect all grades, K–12. The state textbook proclamation for mathematics and corresponding revised essential elements calls for problem-solving activities, higher-level thinking skills, the development of problem-solving strategies, and integration of the calculator and computer as problem-solving tools. The revision of essential elements is an on-going process of the Texas Education Agency.
TEXAS	Staff Development and Teacher Preparation	In 1986, the Texas Education Agency established the Mathematics Staff Development Program, as approved by the State Board of Education. The program is funded under Public Law 98–377, the Education for Economy Security Act (EESA), Title II. It provides funds for the development and implementation of a series of 24 teacher training modules for mathematics teachers of prekindergarten through grade 12. Through a proposal process, contractors across the state are designing staff development modules. The modules are designed to provide a basic foundation for teaching the mathematics essential elements using manipulative materials, concept development techniques, and problem-solving applications. The modules promote critical thinking skills, analytical reasoning, and creative thinking.
TEXAS	Curriculum Revision	The Texas science curriculum has been restructured as a result of H.B. 246, which mandated science essential elements by grade and course. The science essential elements mandate the teaching of the scientific method. Restructured science curriculum includes identifying a problem, stating a hypothesis, predicting outcomes, designing an experiment, and communicating conclusions. Science is a requirement for all students grades K–10.
TEXAS	Curriculum Revision	The mathematics section of the Texas Education Agency is working with curriculum committees from across the state to develop sample curriculum guides in mathematics. The SEA will distribute these guidelines to local school districts prior to the time of implementation of new textbooks and revised essential elements. School districts may use them to update and revise their own curriculum guides. It is hoped that these guides will ultimately help to influence teaching by introducing more concept development, problem-solving, and technology integrated throughout the mathematics curriculum.
UTAH	Curriculum Revision	Utah State Office of Education Core Curriculum Standards were established in 1984 and must be completed by all students K–12 as a requisite for graduation from Utah's secondary schools. Many of these standards contain critical thinking skills. The academic disciplines involved in this initiative are: language arts, math, science, social studies, the arts, healthy lifestyle, information technology, and vocational education. The program is integrated into regular subject instruction.
UTAH	Curriculum Revision	Core curriculum standards (many of which contain critical thinking skills) must be completed by all students K–12 . Standards were implemented in 1984. Additionally, the state has two local instructional initiatives: Empowering Students with Processes to Think Critically and Become Self-Directed Learners, and Planning How to Implement Creative, Critical and Problem-Solving Think Skills in Academic Classes for grades 9–12.
VERMONT	Student Assessment	The "Assessment of Critical Thinking" and the use of critical thinking skills for part of mathematics assessment and writing portfolio pieces will assess 4th and 11th graders in writing and mathematics. Three methods that will be used are: a uniform test, a portfolio, and a "best piece." This approach combines newer assessment methods with more traditional means. Vermont will train its teachers in the use of portfolios and other authentic measures to assess student achievement. The criteria for evaluating mathematics and writing portfolio pieces includes the use of critical thinking skills.

STATE	TYPE	SUMMARY
VIRGIN ISLANDS	No initiatives were reported.	
VIRGINIA	Staff Development and Teacher Preparation	The Science Education Program Assessment Model (SEPAM) consists of survey instruments given to school administrators, teachers, students, and parents. The survey instrument measures the learning environment and fixed facilities of a school for their contribution to science education. The SEA will help conduct the survey upon request by a local school division. A team of observers will be assembled to conduct the classroom observations and facility review. The results of the survey will help schools assess their science programs in order to determine how well they support a thinking-based, hands-on science curriculum.
VIRGINIA	Staff Development and Teacher Preparation	The Extending Collaboration between General Education and Vocational Education initiatives involves the support of in-service training and planning sessions for the SEA staff professionals. The state has collaborated extensively with the Southern Regional Education Board (SREB) in some school divisions and at the state level to incorporate critical thinking skills into regular subject instruction.
VIRGINIA	Staff Development and Teacher Preparation	The Thinking Skills Task Force developed an inventory of thinking skills for use in local school divisions and helped SEA staff members plan a statewide thinking skills conference. The twenty-four member task force is comprised of superintendents, directors of instruction, principals and other educators from across Virginia to provide in-service training, materials, and leadership in potentially every grade and discipline.
VIRGINIA	Staff Development and Teacher Preparation	An undergraduate degree in arts and sciences will be required for all teachers educated in Virginia, effective July 1, 1992. This recommendation was the result of the Governor's Commission on Excellence in Education Report (1986). The Report stated that "to bring about a real change in the way teachers are prepared in college, the undergraduate degree in teacher education should be abolished." The Report stated that the four-year curriculum for students preparing to teach should consist of the greatest number of courses in the arts and sciences which can be included and some specially developed education courses.
VIRGINIA	Curriculum Revision	The Language Across the Curriculum project consists of workshops and publications incorporating reading, writing, listening and speaking across the curriculum. All subject area staff including vocational education were invited to take part in the Language Across the Curriculum project.
VIRGINIA	Staff Development and Teacher Preparation	Thinking and Education: Curriculum, Instruction, Assessment—A Statewide Conference was an interdisciplinary conference drawing teachers and administrators from over 45 school divisions, 7 Virginia colleges and universities, several private schools, and the U.S. Department of Education.
VIRGINIA	Student Assessment	Sixth-Grade Literacy Tests are the result of Virginia's State Learning Objectives which are designed to move students beyond recall by including writing samples and a focus on reading comprehension rather than on separate and discrete skills. Tests were begun in 1988 and assess literacy in English, language arts/reading, and mathematics.
VIRGINIA	Student Assessment	In 1988, Virginia's Standards of Learning Objectives for all general education subject areas, K–12, were revised to include assessment procedures designed to move students beyond recall and into higher cognitive operations.
WASHINGTON	Curriculum Revision	The Schools for the 21st Century initiative is a grant program from the State Department of Public Instruction that gives substantial financial resources to schools that participate in restructuring. Many of these schools have focused on curriculum development that has affected the teaching of critical thinking. In May, 1987 the Washington Legislature authorized the Schools for the 21st Century program. From 134 original proposals, the Governor's Task Force recommended approval of 21 projects to the State Board of Education. The successful projects include one elementary school, one middle school, five high schools, four districts, and two special configurations.
WASHINGTON	Staff Development and Teacher Preparation	Washington promotes critical thinking through its statewide conferences on critical thinking "Thinking About Thinking" and "Thinking About Thinking: Second Thoughts". District teams were brought together at these conferences to consider the latest research and practices in teaching critical thinking skills. All program supervisors in the subject areas (language arts, reading, science, arts, mathematics, social studies, health, and physical education) were involved in the planning and follow-up of these statewide meetings. These conferences have brought together K–12 classroom teachers, principals, administrators, parents and the business community to promote the teaching of critical thinking in Washington's public schools.
WEST VIRGINIA	Curriculum Revision	The West Virginia Challenge integrates problem-solving, scientific reasoning and cooperative learning into the basic content areas of math, language arts, and social studies. The initiative includes four components: Academic Challenge, Thinkers' League, Choose the Challenge, and Target Challenge. The West Virginia Challenge is training individuals at the school, county, Regional Education Service Area, state and community levels in the thinking game strategies that are used to implement these skills. The initiative is integrated into the classroom curriculum.
WISCONSIN	Curriculum Revision.	Wisconsin reports the development of a curriculum guide for middle-level vocational education entitled, "Exploring Life and Work: A Conceptual Approach for the Middle School." The guide encourages exploration of what productive people do and how they think; it presents vocational education as a study for work and life, requiring the development of thinking skills. The guide will target the middle grades (6–9) in vocational education. The curriculum guide seeks to develop general thinking skills including: exploratory course work, concept learning, cooperative learning, and multi-disciplinary activities. The curriculum guide will be published and disseminated in 1990. A second curriculum guide was published in 1989 for all content areas and grade levels, "Strategic Learning in the Context Areas." The goal of this guide is to improve students' reading and writing beyond the elementary grades and to promote writing across the curriculum. The guide includes: art education, foreign language, health education, literature, mathematics, music education, physical education, science, social studies, and vocational education.
WISCONSIN	Staff Development and Teacher Preparation.	Wisconsin Administrative Code: PI4.09 mandates that professional education programs leading to licensure will require study and experience specifically designed to develop the competencies needed to teach critical thinking.
WYOMING	Policy Reform	New standards for school accreditation include problem-solving and critical thinking as two of six elements in the Common Core of Skills. All schools must develop student performance standards in each area of the Common Core and by 1994 report progress toward meeting the performance standards to their communities.

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TABLE 28—STATE INITIATIVES TO RESTRUCTURE LEARNING—SPECIAL NEEDS

STATE	TYPE	SUMMARY
ALABAMA	Staff Development and Teacher Preparation	Jefferson County Talent Identification-Talent Search serves gifted girls in grades 5 through 7 from rural Jefferson County. This program provides professional development opportunities for teachers emphasizing improved instruction, teaching critical thinking skills, and integration of these skills in the mathematics curriculum. The initiative also involves an assessment of the effects of the professional development activities on the SAT/ACT scores of participating girls.
ALASKA	Staff Development and Teacher Preparation	The Alaskan Staff Development Network is designed to assist teachers and administrators in helping at-risk students improve their academic achievement. The Coalition For Alaskan At-Risk Youth is a statewide partnership designed to assist teachers and administrators in helping at-risk students overcome barriers to high performance.
COLORADO	Student Assessment	The Chapter I Whole Language Reading Project (WLRP) is based on a comprehensive assessment of individual students' needs and interests where the teacher develops an individualized educational plan for each student. The project goal is to provide supplemental instruction that will help participating students succeed as readers, writers, and thinkers in their regular classroom with a pattern of sustained growth. Fifty-three Chapter I programs are implementing Whole Language Reading Projects serving approximately 17,900 students in grades K–12.
IOWA	Staff Development and Teacher Preparation	The Reading Comprehension Strategies program involves SEA-sponsored workshops designed to enhance the abilities of Chapter I reading teachers to teach comprehension skills/strategies to their students. All Chapter I students in grades K–12 are targeted. The academic discipline involved is reading and the critical thinking skills are taught separately in the regular Chapter I reading instruction classes. All special needs students grades K–12 are served, and Chapter I teachers are targeted by this initiative.
MAINE	Curriculum Revision	HOTS (Higher Order Thinking Skills) involves schools in 10 LEAs and serves Chapter I students in grades 3–7. HOTS targets all disciplines and attempts to help develop fundamental thinking skills that underlie all learning and problem-solving through computer use and specialized instruction. The program is separate from regular instruction and its goal is to improve the level of achievement for Chapter I students so that they no longer need remedial services.
MARYLAND	Curriculum Revision	Learning to Think/Thinking to Learn is a program designed to provide at-risk learners with a targeted program of direct instruction in thinking skills and cognitive learning strategies. The students targeted are Chapter 1 eligible and in grades 2–6. The program is incorporated into regular subject instruction in reading/language arts, mathematic, social studies, and science. An identified set of thinking skills, concomitant graphic organizer, and metacognitive strategies are explicitly taught and applied to various content areas.
NEVADA	Curriculum Revision	Talents Unlimited trains teams of teachers to teach critical thinking skills in remedial programs. Academic disciplines targeted by this program for special needs students are reading, mathematics, and language arts. The program is incorporated into class instruction to provide higher levels of thinking and problem-solving for participating students.
NEVADA	Staff Development and Teacher Preparation	Impact trains teachers to teach critical thinking skills in remedial programs. The program serves students in grades 7–9 who are eligible for Chapter I services or those in institutions for the neglected and delinquent. Academic disciplines targeted by this program for special needs students are reading, mathematics, and language arts. The program is incorporated into class instruction.
NEVADA	Staff Development and Teacher Preparation	HOTS (Higher Order Thinking Skills) provides in-service training for teachers to build thinking skills in Chapter I students. The program serves students in grades 4–8 who are eligible for Chapter I services or those in institutions for the neglected and delinquent. The HOTS program focuses on general critical thinking strategies and skills, encouraging the development of analytical reasoning and problem-solving skills using computers. The program is incorporated into all remedial class instruction to provide a higher level of thinking and problem-solving for participating students.
NEVADA	Staff Development and Teacher Preparation	Teaching Strategies for Thinking trains teams of teachers to teach critical thinking skills in remedial programs. The program serves students in grades K–6 who are eligible for Chapter I services or those in institutions for the neglected and delinquent. Academic disciplines targeted by this program for special needs students are reading, mathematics, and language arts. The program is incorporated into class instruction to provide higher levels of thinking and problem-solving for participating students.
NEW JERSEY	Staff Development and Teacher Preparation	The Basic Skills Improvement Program is a set of workshops by the SEA for LEAs on how to increase academic achievement levels for students who are not acquiring their grade-level skills, or who are unable to pass the state's High School Proficiency Test (HSPT) needed for graduation. The disciplines targeted are reading, writing and mathematics.
NEW MEXICO	Curriculum Revision	This Higher Order Thinking Skills initiative serves Chapter I students in grades 3 to 6, who scored under the 49th percentile. Instruction focuses on teacher ability to provide problem-solving and linkage activities that students work through. Additional computer software is provided as a tool to improve the learning of at-risk students while enhancing the environment so that students may test and converse about new ideas.
NEW MEXICO	Staff Development and Teacher Preparation	The Mediated Learning initiative focuses on teacher interaction with special needs students, grades K–6. Chapter I, Special Education, Average and Gifted are served in the Renasco school district. The instructional elements of Mediated Learning focuses on the teacher as he or she becomes mediator in learning interactions when the following elements are present—intention to produce structured change, Transcendence of immediate learning, demonstration of how the learning experience has meaning and purpose,and Self regulation of the child's behavior by his response. A separate curriculum to mediate higher order thinking skills and elicitation of these skills in content areas provides provisions of new experiences. These new experiences allow the child to demonstrate that he has mastered learning principles and strategies.

STATE	TYPE	SUMMARY
NEW YORK	Policy Reform	The SEA Office for School Improvement Grants Management and Compliance has developed a program known as Congruence which ensures that special needs students have access to equitable program opportunities across curriculum areas. Re-authorized Chapter I legislation and the attendant statement of purpose claim that in order to succeed in regular programs; schools must provide frequent and regular coordination between the compensatory education program and developmental programs; and that students should demonstrate achievement gains in both basic and advanced studies. While New York did not report a specific critical thinking initiative targeting special needs students, the state did report on an initiative which resulted from the educationally disadvantaged having access to equitable program opportunities across curriculum areas. Though the Office for School Improvement Grants Management and Compliance has no project which focuses specifically on critical thinking skills; where those projects operate, special needs students are included. Congruence projects operate within and across various subject areas and include reading, mathematics, writing (using bilingual methodology) and ESL. Educationally disadvantaged students in grades K–12 are served by this initiative.
PENNSYLVANIA	Staff Development and Teacher Preparation	The Pennsylvania Migrant Education Program offers teacher training and follow-up in critical thinking skills. The program serves special needs students in grades K–12 who are children of migratory farmworkers. The instructional approach used to target these students and all academic disciplines is the Tactics for Thinking program. This program makes it possible to track and monitor the child's education while providing supplemental academic and support services for children and their families. The goals of the Migrant Education Program are reduction of the drop-out rate, increased graduation numbers and increased literacy among migrant children.
PENNSYLVANIA	Student Assessment	The Mediated Learning Experience (MLE) focuses on developing cognitive skills. The assessment component is called Learning Potential Assessment Devices. Special needs students ages 10 and older are served within 9 of the 28 districts served. The academic disciplines targeted are often those related to communications skills classes but this program is applicable to all curriculum areas. Separate from regular classroom instruction, this program is designed to improve students' cognitive skills by using Feverstein's Instrumental Enrichment approach.
PUERTO RICO	Curriculum Revision	Instrumental Enrichment and Project Impact aim at improving students thinking skills. Both Instrumental Enrichment and Project Impact serve 540 students in the 7th through 9th grades who are Chapter I special needs students. The programs are self-contained and use the programs designed by Feverstein. These initiatives are orientated to enhance learning and reduce the instructional lag these students face. The middle grades are targeted by this initiative.
SOUTH CAROLINA	Curriculum Revision	Higher Order Thinking Skills (HOTS) serves Chapter I students in grades 4 and 5. The disciplines targeted for these special needs students fall under the reading/language arts curriculum. The program is designed to meet individual needs and the goal is to combine an instructional approach with general concepts and skills taught in the HOTS lab.
TEXAS	Staff Development and Teacher Preparation	The Institute for Higher Level Thinking for Migrant Teachers gives participants strategies that facilitate the teaching of higher level thinking skills in migrant classrooms, develop practices that create classroom climates that encourage higher level thinking for migrant students, and develop a final document with higher level thinking skills for migrant teachers. The Institute focuses on training in the thinking skill areas outlined in the Tactics program of the Association for Supervision and Curriculum Development. The initiative incorporates thinking skills into the curriculum and focuses on staff development for migrant teachers in order to increase the use of thinking skills in classrooms serving migrant students.
WISCONSIN	Curriculum Revision	Caring, Daring, and Sharing is an effort in two Wisconsin urban middle schools to incorporate into the school curriculum accelerated learning methods, cooperative learning techniques, programming for differences in student learning styles, and emphasis on critical and creative thinking. The program serves disadvantaged students in grades 6–8 and the disciplines targeted are language and history.

EDUCATIONAL

OUTCOMES

State Accountability Systems

Chart 5, State Public Accountability Policies, indicates whether the states operate a comprehensive educational indicator system and whether they provide a report card on schools or districts.

1990 NAEP Trial State Mathematics Assessment

Chart 6, Comparisons of Overall Mathematics Proficiency Based on Appropriate Tests of Statistical Significance, provides a method for making appropriate comparisons in average overall mathematics proficiency across the states (including the District of Columbia) and territories participating in NAEP's 1990 Trial State Assessment Program. The states are listed by overall average mathematics proficiency. However, the information presented in Chart 6, which uses appropriate tests of statistical significance to determine when average proficiency between states differs, shows that it would be quite misleading to assign numerical rankings (1 to 40) to these results. As can be seen, the pattern for most states is one of having lower proficiency than some states, the same average proficiency as some states, and higher average proficiency that some states. To find out how any one state performed in comparison to the other states, find the state's name in the left column and then read across the chart.

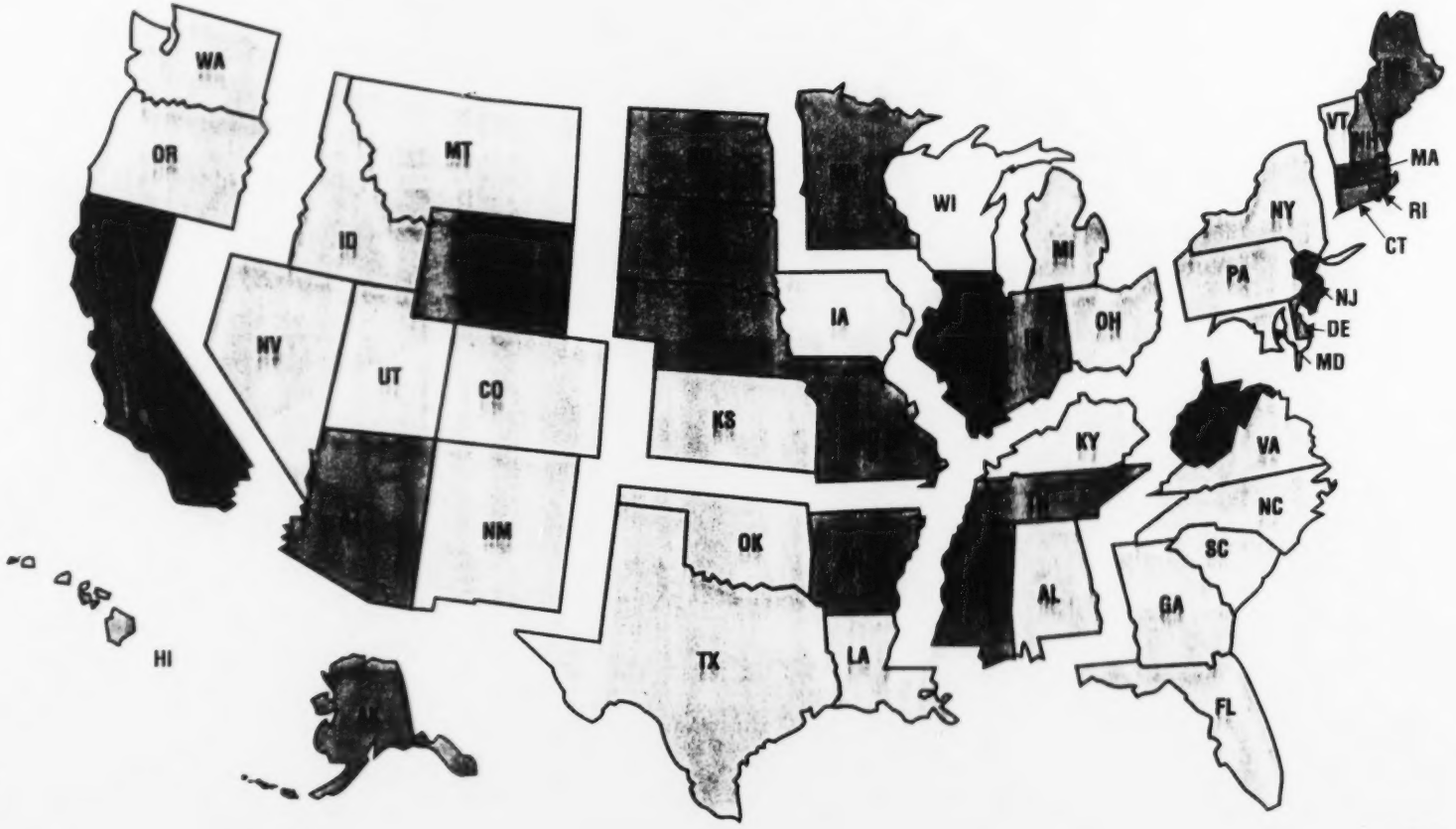
Table 29 summarizes the average proficiency in each of the five mathematics content areas for each of the states. North Dakota, Iowa and Montana were the higher performing states in numbers and operations, although Nebraska, Minnesota and Wisconsin did not have lower average proficiency than Iowa or Montana. North Dakota, Montana, Iowa, Nebraska, Wisconsin, New Hampshire, and Minnesota all had similar average proficiency in measurement, although Montana had higher average proficiency than did Minnesota. Also, a number of other states had average proficiency that did not differ from average proficiency in Iowa, Nebraska, Wisconsin, New Hampshire and Minnesota. Although this type of overlapping prevailed across the average proficiency results for the content areas, Montana, North Dakota and Iowa had higher average proficiency in geometry than many other participating states and territories. North Dakota, Montana, Iowa and Minnesota generally had higher average proficiency in data analysis, statistics and probability. In algebra and functions, Montana, North Dakota, Iowa, Minnesota and Nebraska were the high-performing states.

Chart 7 shows states participating in the 1990 and 1992 trial state level assessments in NAEP. The figure shows that the vast majority of states participated in the 1990 math trial and even more are involved in the 1992 reading trial.

CHART 5 - STATE PUBLIC ACCOUNTABILITY POLICIES

- ☐ District of Columbia
- ☐ Puerto Rico
- ☐ Virgin Islands

- ■ Indicator System and Report Card
- ☐ Indicator System Only
- ■ No Indicator System and No Report Card
- ☐ No Data Collected



Source: "Summary Profiles State Education Indicator Systems", Pelavin Associates, February 13, 1990

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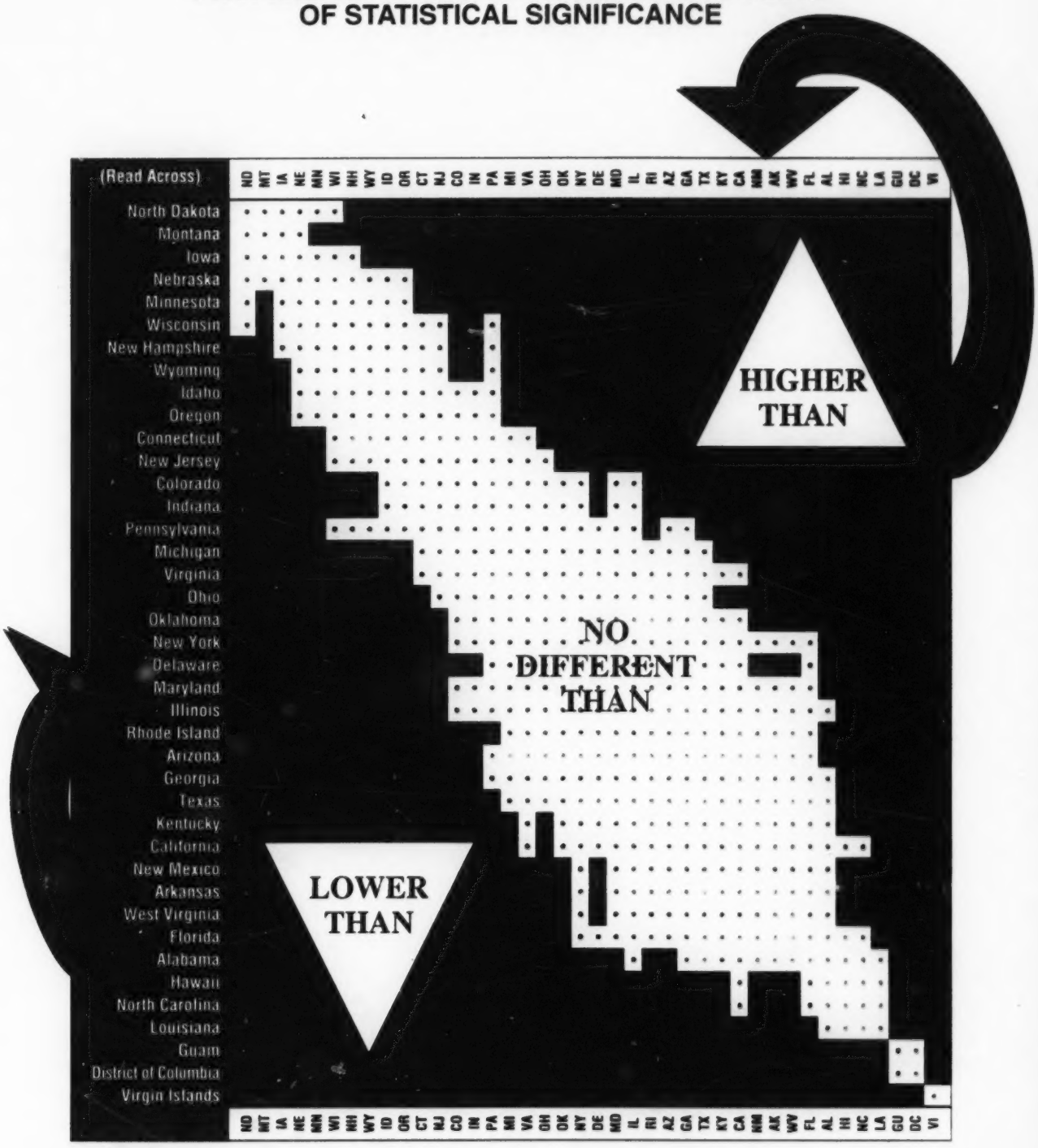
CHART 6 - COMPARISONS OF OVERALL MATHEMATICS PROFICIENCY BASED ON APPROPRIATE TESTS OF STATISTICAL SIGNIFICANCE



Note: Reading across from left to right, this chart shows whether the average proficiency of each state or territory is lower than, the same as, or higher than that of other participants.

* Significance determined by an application of the Bonferroni procedure based on 780 comparisons by comparing the difference between the two means with four times the square root of the sum of the squared standard errors.

For any given state:

- Overall average proficiency statistically significantly higher than comparison state.
- No statistically significant difference from comparison state.
- Overall average proficiency statistically significantly lower than comparison state.

Source: U.S. Department of Education, National Center for Education, 1990 NAEP Trial State Mathematics Assessment.

TABLE 29—AVERAGE PROFICIENCY IN MATHEMATICS CONTENT AREAS

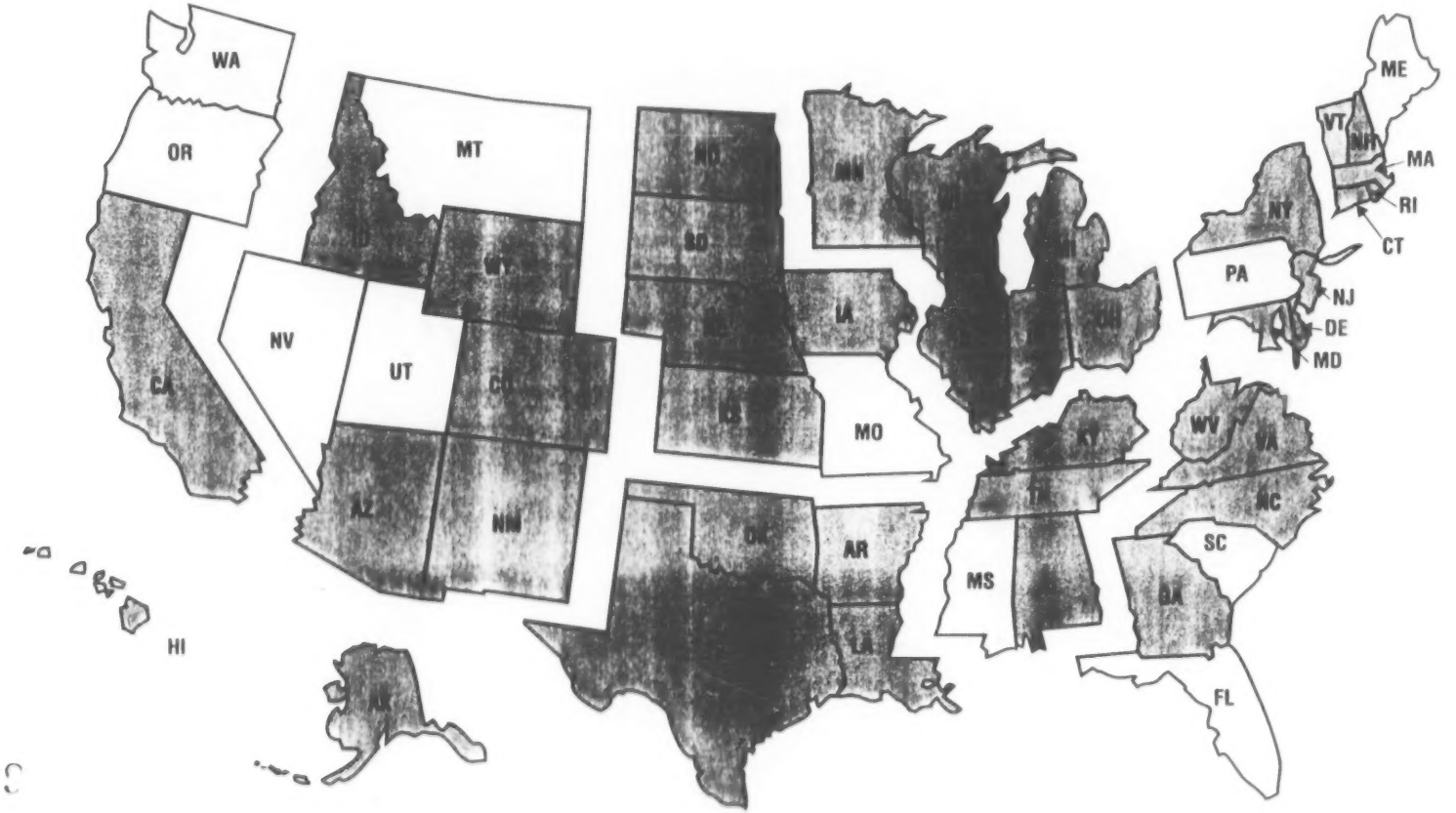
Grade 8 Public Schools	Numbers and Operations	Measurement	Geometry	Data Analysis, Statistics and Probability	Algebra and Functions
NATION	266 (1.4)	258 (1.7)	259 (1.4)	262 (1.8)	260 (1.3)
Northeast	271 (3.1)	266 (4.7)	268 (3.6)	273 (3.6)	267 (3.4)
Southeast	259 (2.9)	246 (3.8)	249 (2.6)	250 (3.3)	254 (2.7)
Central	270 (2.7)	263 (3.4)	262 (3.1)	265 (3.2)	263 (2.1)
West	264 (2.6)	258 (3.0)	260 (2.6)	262 (3.6)	259 (2.4)
STATES					
Alabama	259 (1.2)	247 (1.4)	248 (1.2)	251 (1.6)	251 (1.4)
Arizona	264 (1.2)	257 (1.4)	256 (1.1)	258 (1.4)	258 (1.3)
Arkansas	262 (0.8)	253 (1.2)	253 (1.0)	254 (1.2)	253 (1.1)
California	259 (1.2)	252 (1.5)	255 (1.3)	254 (1.7)	256 (1.3)
Colorado	269 (1.0)	265 (1.3)	266 (1.1)	269 (1.1)	266 (1.1)
Connecticut	273 (1.0)	269 (1.5)	266 (1.1)	272 (1.4)	268 (1.2)
Delaware	265 (0.8)	258 (1.0)	256 (0.7)	261 (1.0)	260 (1.0)
District of Columbia	238 (0.8)	221 (1.0)	229 (0.9)	222 (1.5)	235 (1.1)
Florida	260 (1.2)	251 (1.4)	251 (1.3)	255 (1.5)	255 (1.3)
Georgia	263 (1.2)	252 (1.5)	256 (1.3)	260 (1.5)	257 (1.5)
Hawaii	256 (0.9)	249 (0.8)	252 (0.7)	242 (1.0)	249 (0.8)
Idaho	274 (0.8)	270 (1.0)	269 (0.8)	274 (0.9)	269 (0.9)
Illinois	265 (1.7)	256 (2.0)	256 (1.7)	262 (2.0)	260 (1.7)
Indiana	271 (1.2)	263 (1.3)	264 (1.1)	269 (1.4)	265 (1.2)
Iowa	283 (1.0)	277 (1.5)	275 (1.3)	281 (1.2)	274 (1.1)
Kentucky	261 (1.2)	253 (1.5)	253 (1.2)	257 (1.3)	256 (1.1)
Louisiana	253 (1.1)	241 (1.5)	242 (1.3)	243 (1.6)	245 (1.3)
Maryland	264 (1.4)	256 (1.7)	256 (1.4)	260 (1.5)	263 (1.6)
Michigan	268 (1.2)	260 (1.3)	262 (1.0)	264 (1.4)	264 (1.2)
Minnesota	279 (1.0)	272 (1.1)	273 (1.1)	279 (0.9)	274 (0.9)
Montana	282 (1.0)	279 (1.4)	280 (0.8)	282 (0.8)	278 (0.9)
Nebraska	279 (1.0)	274 (1.4)	273 (1.1)	279 (1.0)	273 (1.0)
New Hampshire	275 (1.0)	272 (1.3)	272 (1.0)	276 (0.9)	271 (1.0)
New Jersey	274 (1.1)	267 (1.4)	266 (1.1)	270 (1.3)	268 (1.1)
New Mexico	258 (0.8)	253 (0.8)	257 (0.9)	253 (1.1)	256 (1.0)
New York	263 (1.3)	255 (1.6)	259 (1.4)	263 (1.7)	260 (1.2)
North Carolina	255 (1.0)	241 (1.1)	249 (1.0)	247 (1.3)	251 (1.0)
North Dakota	286 (1.1)	280 (1.9)	278 (1.3)	286 (1.5)	275 (1.1)
Ohio	268 (1.0)	259 (1.2)	260 (1.1)	266 (1.2)	262 (1.0)
Oklahoma	268 (1.2)	258 (1.5)	259 (1.4)	264 (1.6)	262 (1.2)
Oregon	273 (1.0)	269 (1.3)	270 (0.9)	274 (1.3)	270 (1.1)
Pennsylvania	270 (1.5)	265 (2.0)	263 (1.7)	268 (1.9)	265 (1.6)
Rhode Island	264 (0.6)	256 (0.8)	256 (0.6)	258 (0.6)	261 (0.8)
Texas	262 (1.2)	253 (1.4)	258 (1.4)	256 (1.7)	256 (1.5)
Virginia	268 (1.4)	259 (1.8)	261 (1.5)	264 (1.8)	265 (1.6)
West Virginia	260 (0.9)	252 (1.3)	254 (0.9)	256 (1.2)	254 (1.0)
Wisconsin	278 (1.2)	273 (1.7)	272 (1.3)	277 (1.4)	271 (1.3)
Wyoming	275 (0.7)	270 (0.9)	270 (0.6)	274 (0.7)	270 (0.7)
TERRITORIES					
Guam	239 (0.7)	227 (0.9)	236 (0.8)	213 (0.8)	230 (0.7)
Virgin Islands	227 (0.6)	214 (1.3)	222 (0.8)	196 (1.2)	218 (0.8)

Note: The standard errors of the estimated proficiencies appear in parentheses. It can be said with 95 percent certainty that for each population of interest, the value for the whole population is within plus or minus two standard errors of the estimate for the sample.
Source: 1990 NAEP Trial State Assessment.

CHART 7 - STATES PARTICIPATING IN 1990 AND 1992 NAEP STATE TRIALS

- ☐ District of Columbia
- ☐ Puerto Rico
- ☐ Virgin Islands

- ☐ 1990 and 1992 State Trials
- ☐ 1990 State Trials Only
- ☐ 1992 State Trials Only
- ☐ No Participation



Source: U.S. Department of Education, National Center for Education Statistics, Education Assessment Division

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